

Contents

IPNet Digest	Volume 2, Number 01 January 16, 1995	2
IPNet Digest	Volume 2, Number 02 February 21, 1995	13
IPNet Digest	Volume 2, Number 03 April 2, 1995	22
IPNet Digest	Volume 2, Number 04 May 2, 1995.....	35
IPNet Digest	Volume 2, Number 05 May 17, 1995.....	43
IPNet Digest	Volume 2, Number 06 July 1, 1995.....	49
IPNet Digest	Volume 2, Number 07 July 31, 1995.....	65
IPNet Digest	Volume 2, Number 08 August 31, 1995.....	73
IPNet Digest	Volume 2, Number 09 October 1, 1995.....	80
IPNet Digest	Volume 2, Number 10 October 31, 1995.....	95
IPNet Digest	Volume 2, Number 11 December 1, 1995	106
IPNet Digest	Volume 2, Number 12 December 31, 1995	123

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Meeting: Inverse Problems in Engineering Seminar
New Book: Inverse Problems in the Mechanics of Materials
Question: What is the Inverse Heat Conduction Problem?
Table of Contents: Journal of Math. Systems, Estimation, and Control
Table of Contents: SIAM Journal on Control and Optimization
Table of Contents: SIAM Journal on Mathematical Analysis
Table of Contents: SIAM Journal of Optimization
Table of Contents: SIAM Journal on Applied Mathematics
Table of Contents: SIAM Journal on Numerical Analysis
Table of Contents: Advances in Computational Mathematics
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu

From: "Hank Busby" <hbusby@magnus.acs.ohio-state.edu>
Subject: Inverse Problems in Engineering Seminar
Date: Thu, 15 Dec 94

The Seventh Inverse Problems in Engineering Seminar
Monday, June 12 -- Tuesday, June 13, 1995
Columbus, OH 43210-1107

Call for Papers

The Seventh Inverse Problems in Engineering Seminar is being organized by the Department of Mechanical Engineering and the Department of Mathematics at The Ohio State University. This event is the continuation of the informal seminars which were initiated at Michigan State University in 1987. This seminar will be sponsored by the Department of Mechanical Engineering, Department of Mathematics, Gear Dynamics and Gear Noise Research and Gear Dynamics Laboratory, College of Mathematics and Physical Science, and the College of Engineering at the The Ohio State University.

Papers are solicited from all areas involving inverse methods and their applications. Four broad categories are being used to organize sessions. These categories, with some subtopics delineated, are:

1. Inverse Problems in Heat Transfer (Inverse Heat Conduction, Thermal Property Estimation)
2. Mathematical Aspects of and Techniques for Inverse Problems (Inverse Theory and Methods, Stability Considerations)
3. Design of Experiments and Applications of Inverse Methods (Optimal Experiment Design, Analysis of Actual Experimental Data)
4. Inverse Problems Exclusive of Heat Transfer (Bio-Engineering)

Inverse Problems, Shape Optimization, Inversion of Interferometric
Data,
Inverse Scattering and Tomography)

Presentations will be informal twenty minute talks, supported by transparencies or slides, and followed by discussion. If the number of submissions warrants additional program time, a poster session will be included. Please submit a tentative title and an abstract by February 15, 1994 . The seminar fee is \$65.

Send titles and abstracts or other inquiries to either Co-Chairs:
Co-Chair: Dr. Henry R. Busby Co-Chair: Dr. Lijia Guo
 The Ohio State University The Ohio State
University Department of Mechanical Engineering Department of
Mathematics Mathematics 100 Math Bldg 231
 206 West 18 th Ave. Columbus, OH
West 18 th Ave Columbus, OH
43210 Phone (614) 292-4917 Phone (614) 292-5751
 FAX: (614) 292-3163 FAX: (614) 292-
1479 busby.2@osu.edu guo.20@osu.edu

From: Andrei Constantinescu <constant@athena.polytechnique.fr>
Subject: Book Announcement
Date: Tue, 3 Jan 1995

Book Announcement

Inverse Problems in the Mechanics of Materials: an Introduction
by H.D.BUI (Ecole Polytechnique, Palaiseau, France)

Published by CRC Press, Boca Raton (June 1994), 244pp.
Catalog No. 8471MYX ISBN:0-8493-8471-0

Abstract

Inverse Problems in the Mechanics of Materials concentrates on two timely subjects: ill-posed inverse problems related to defect identification; and the mechanics of homogenous and heterogenous media, including such topics as cracked bodies, solids with interface or inclusions, and materials rendered inhomogenous by irreversible deformation due to their thermomechanical history. These intriguing subjects are not found together in previous publications. Written in an unique easy-to-read format, Inverse Problems in the Mechanics of Materials provides quick access to current information. It includes up-to-date refence and many recent results, particularly in such classical subjects as elasticity, plasticity and fracture mechanics. The reader discovers numerous recipes for solving inverse problems, and reviews of available methods provide applications to real-life problems in industry

Contents

Elasticity and Plasticity
Fracture and Damage
Conservation Laws
Dynamic Fracture

Inverse Problems in Vibrations
Diffraction of Elastic Waves
Diffraction of Acoustic Waves
Tomography
Microgravimetry
Identification of Materials
Residual Stresses

Appendices

Regularization of Ill-Posed Problems
Laplacian Inverse Problems
Optimal Control Theory in Mechanics

From: (Dr. James Beck) <beck@egr.msu.edu>
Sender: beck@egr.msu.edu
Subject: Question
Date: Mon, 9 Jan 95

WHAT IS THE INVERSE HEAT CONDUCTION PROBLEM?

There is apparently some disagreement regarding what the inverse heat conduction problem (IHCP) is. One definition is the determination of the surface heat flux (or temperature) from measured transient temperatures inside a heat conducting body. In this definition the initial temperature distribution is considered known.

Another definition estimates the surface heat flux from transient measured interior temperatures and simultaneously the initial temperature distribution.

I would appreciate receiving messages regarding which definition that you use and if it makes a difference. If you have a different definition, I would appreciate learning about it.

COMMENTS

The Burggraf and other exact solutions for the linear IHCP show that the solution does not depend upon the initial condition. See Beck, Blackwell and St. Clair for the Burggraf analysis or Murio (The Mollification Method, Wiley-Interscience, 1993) for the reference and related discussion.

This behavior is also shown by many linear methods including function specification, Tikhonov regularization (whether or not the adjoint equations are used with conjugate gradients, provided the unique minimum for the given objective function is found), mollification and space marching. This is only for linear problems. Another stipulation is that the calculations start a significant time before the heating/cooling starts. For all of the above cases the solution must be linear and can be investigated by having a single error at a given time. This then leads to a filter algorithm of the form of $q(M) = \sum_{i \text{ from } M-m_1 \text{ to } M+m_2} f(M-i)Y(i)$. The $f(j)$ values are the filter coefficients for a single unit error at any time (except near the beginning or the end). The $Y(i)$ values are the measured temperatures. (Beck, Blackwell and St. Clair, p. 197). This equation says that the estimates are independent of the initial conditions and that one can find the values at any time without finding previous or subsequent values. The difference between the methods is the contained in the precise form of $f(i)$. For a finite body which is heated at $x = 0$ and insulated at $x = L$, the above is true. It may be more general.

I welcome any comments. My E-mail address is beck@egr.msu.edu.

From: Edwin F. Beschler <beschler@spint.compuserve.com>
Subject: J. Math. Systems, Estimation, and Control
Date: Fri, 9 Dec 1994

Journal of Mathematical Systems, Estimation, and Control Volume 5, No.
1

Table of Contents

Nonlinear Feedback Control of Flexible Robot Arms with Infinite
Dimensional Models X. Ding, T.-J. Tarn, A. K. Bejczy, C. Guo

Empirical Distributions in Least Squares Estimation for Distributed
Parameter Systems B.G. Fitzpatrick and G. Yin

The Extended Kalman Filter as a Local Asymptotic Observer for
Discrete-Time Nonlinear Systems Yongkyu Song and Jessy W. Grizzle

L Sensitivity Minimization of Linear System Representations via Gradient
Flows U. Helmke and J.B. Moore

Summary: Limit Theorems of Probability Theory in Linear Controlled
Evolution Systems with Quadratic Cost Bozenna Pasik-Duncan

Summary: A Unified Representation for Nonlinear Discrete-Time and
Samples Dynamics S. Monaco and D. Normand-Cyrot

Summary: The Spaces of Improper Rational Matrices and ARMA-Systems of
Fixed McMillan Degree Filippo de Mari and Heide Gl=9Fsing-L=9Fer=A7en

Summary: A Modification of the Trust-Region Gauss-Newton Method to Solve
Separable Nonlinear Least Squares Problems Christine B=9Ackmann

Summary: An Algorithm for Viability Kernels in H=9Alderian Case:
Approximation by Discrete Dynamical Systems
Marc Quincampoix, Patrick Saint-Pierre

Summary: An Observer for Infinite-dimensional Skew-adjoint Bilinear
Systems
J.P. Gauthier, C.Z. Xu, and A. Bounabat

Summary: An Intrinsic Characterization of Properness for Linear Time-
varying Systems
E. Delaleau and J. Rudolph

Summary: On Abnormal Extremals for Lagrange Variational Problems
A.A. Agrachev and A.V. Sarychev

Summary: Linear Quadratic Optimal Control of Time-Varying Systems with
Indefinite Costs on Hilbert Spaces: The Finite Horizon Problem Birgit
Jacob

Summary: Realization of Rational Matrices by Singular Systems
Heide Gl=9Fsing-L=9Fer=A7en

Errata Summary: Singular Perturbation for Controlled Wave Equations
Francesca Bucci

[Note: Control characters (=9, etc.) are as received. -Ed.]

From: thomas@siam.org
Subject: SICON 33-2
Date: Wed, 04 Jan 95

SIAM Journal on Control and Optimization MARCH 1995 Volume 33,
Number 2

CONTENTS

Jack Warga: In Appreciation

H^∞ Optimal Sensitivity for a Class of Infinite-Dimensional
Systems
Hong Yang

Zeros of Spectral Factors, the Geometry of Splitting Subspaces, and the
Algebraic Riccati Inequality A. Lindquist, G. Michaletzky, G. Picci

A Globally Convergent Successive Approximation Method for Severely
Nonsmooth Equations Liqun Qi and Xiaojun Chen

Optimal Supervisory Control of Discrete Event Dynamical Systems
Ratnesh Kumar and Vijay K. Garg

Uniform Stabilization of a Hybrid System of Elasticity Bopeng Rao

System Equivalence for Periodic Models and Systems
Osvaldo M. Grasselli, Sauro Longhi, and Antonio Tornambe

Supervisory Control of Nondeterministic Systems with Driven Events via
Prioritized Synchronization and Trajectory Models M. A. Shayman, R.
Kumar

Risk-Sensitive Production Planning of Stochastic Manufacturing Systems:
A Singular Perturbation Approach Qing Zhang

Multilevel Hierarchical Decision Making in Stochastic Marketing-
Production
Systems S. P. Sethi and Qing Zhang

On Bang-Bang Constrained Solutions of a Control System
Raphael Cerf and Carlo Mariconda

Dealing with Integral State Constraints in Boundary Control Problems of
Quasilinear Elliptic Equations Eduardo Casas and Luis A. Fernandez

The Stochastic Maximum Principle for Linear, Convex Optimal Control with
Random Coefficients Abel Cadenillas and Ioannis Karatzas

Persistency of Excitation in Identification Using Radial Basis Function
Approximants A. J. Kurdila, Francis J. Narcowich, Joseph D. Ward

Maximizing Robustness in Nonlinear Illposed Inverse Problems
Kazufumi Ito and Karl Kunisch

Corrigendum: Lagrange Multipliers in Stochastic Programming
Sjur Didrik Flam

From: young@siam.org
Subject: SIAM J. Math. Anal., Vol. 26, No. 3, Contents
Date: Fri, 13 Jan 95

SIAM Journal on Mathematical Analysis MAY 1995 Volume 26, Number
3

CONTENTS

Nonlinear Stability of Strong Detonations for a Viscous Combustion Model
Tai-Ping Liu and Long-An Ying

Approximation pres du Temps D'Explosion des Solutions d'Equations d'Onde
Quasi-Lineaires en Dimension Deux Serge Alinhac

Instability of Stationary Bubbles Anne de Bouard

Hearing Point Masses in a String Robert Carlson

Eigenvalues of the Far Field Operator and Inverse Scattering Theory
David Colton and Rainer Kress

The Inverse Eigenvalue Problem with Finite Data for Partial Differential
Equations David C. Barnes and Roger Knobel

Free Boundary Problems for Potential and Stokes Flows Via Nonsmooth
Analysis Srdjan Stojanovic and Thomas Svobodny

Analysis of a One-Dimensional Model for Compressible Miscible
Displacement in Porous Media Youcef Amirat and Mohand Moussaoui

On Asymptotic Self-Similar Behaviour for a Quasilinear Heat Equation:
Single Point Blow-Up Victor A. Galaktionov

Two-Phase Stefan Problem with Supercooling I. G. Goetzk, B. Zaltzman

New Uniqueness Theorems for the One-Dimensional Drift-Diffusion
Semiconductor Device Equations Fatiha Alabau

Local Regularity of the One-Dimensional Motion of a Viscoelastic Medium
Jong Uhn Kim

Oscillations of Solutions to the Two-Dimensional Broadwell Model, an
H-Measure Approach Robert Peszek

Families of Two-Point Pade Approximants and Some ${}_4F_3(1)$
Identities Jet Wimp and Bernhard Beckermann

From: nelson@siam.org
Subject: SIAM J. OF OPTIMIZATION, NO.5,VOL.1
Date: Tue, 20 Dec 94

Siam J. of Optimization, No. 5, Vol. 1, February 1995
TABLE OF CONTENTS

Why a Pure Primal Newton Barrier Step may be Infeasible Margaret H.
Wright

Interior Point Methods in Semidefinite Programming with Applications to

Combinatorial Optimization Farid Alizadeh

Infeasible-Interior-Point Primal-Dual Potential-Reduction Algorithms for
Linear Programming Shinji Mizuno, Masakazu Kojima, and Michael J.
Todd

A Fast Heuristic Method for Polynomial Moment Problems with
Boltzmann-Shannon Entropy J. M. Borwein and W. Z. Huang

Symmetric Quasidefinite Matrices Robert J. Vanderbei

On the Primal-Dual Steepest Descent Algorithm for Extended
Linear-Quadratic Programming Ciyou Zhu

A Positive Algorithm for the Nonlinear Complementarity Problem
Renato D. C. Monteiro, Jong-Shi Pang, and Tao Wang

Practical Interior-Point Method for Convex Programming
Florian Jarre and Michael A. Saunders

An All-Inclusive Efficient Region of Updates for Least Change Secant
Methods Henry Wolkowicz and Qing Zhao

An Optimal Positive Definite Update for Sparse Hessian Matrices
R. Fletcher

Trust Region Algorithms for Solving Nonsmooth Equations Liqun Qi

From: thomas@siam.org

Subject: SIAP 55-2

Date: Mon, 19 Dec 94

SIAM Journal on Applied Mathematics APRIL 1995 Volume 55, Number 2
CONTENTS

Biography of Joseph B. Keller

Exact Nonreflecting Boundary Conditions for the Time Dependent Wave
Equation
Marcus J. Grote and Joseph B. Keller

Instability of Rapidly Rotating Polytropes
N. J. Balmforth, L. N. Howard, and E. A. Spiegel

Shock Layer Movement for Burgers' Equation
Jacques G. L. Laforgue and Robert E. O'Malley, Jr.

Shock Formation in a Multidimensional Viscoelastic Diffusive System
Donald S. Cohen, Andrew B. White, Jr., and Thomas P. Witelski

On-Surface Conditions for Structural Acoustic Interactions in Moving
Media
Lu Ting

Asymptotic Evaluation of Integrals Related to Time-Dependent Fields Near
Caustics Robert Burridge

Limit Process Expansions and Homogenization Julian D. Cole

Internal Layers, Small Eigenvalues, and the Sensitivity of Metastable Motion

Michael J. Ward and Luis G. Reyna

Weakly Nonlinear Waves for a Class of Linearly Unstable Hyperbolic Conservation

Laws with Source Terms J. Kevorkian, J. Yu, and L. Wang

Mean Field Effects for Counterpropagating Traveling Wave Solutions of Reaction-Diffusion Systems A. J. Bernoff, R. Kuske, B. J. Matkowsky, V. Volpert

High-Order Finite Element Methods for Singularly Perturbed Elliptic and Parabolic Problems Slimane Adjerid, Mohammed Aiffa, and Joseph E. Flaherty

Singular Perturbation Solutions of Noisy Systems Frank C. Hoppensteadt

Turbulent Baker's Maps Stephen Childress

A Theory of Sustainable Harvesting Donald Ludwig

From: tschoban@siam.org

Subject: SINUM 32-1 Table of Contents

Date: Mon, 12 Dec 94

SIAM Journal on Numerical Analysis FEBRUARY 1995, Volume 32,
Number 1

CONTENTS

A Posteriori Error Bounds and Global Error Control for Approximation of Ordinary Differential Equations Donald Estep

The Potential for Parallelism in Runge-Kutta Methods. Part 1: RK Formulas in Standard Form K. R. Jackson and S. P. Norsett

Accurate Discretization for Singular Perturbations: The One-Dimensional Case X. C. Hu, T. A. Manteuffel, S. McCormick, and T. F. Russell

Error Bounds for Fractional Step Methods for Conservation Laws with Source Terms Tao Tang and Zhen-Huan Teng

A Linear Algebraic Analysis of Diffusion Synthetic Acceleration for the Boltzmann Transport Equation

S. F. Ashby, P. N. Brown, M. R. Dorr, and A. C. Hindmarsh

A Linear Algebraic Development of Diffusion Synthetic Acceleration for Three-Dimensional Transport Equations Peter N. Brown

Nonlinear Galerkin Method Using Chebyshev and Legendre Polynomials I. The One-Dimensional Case Jie Shen and Roger Temam

An Application of the Abstract Multilevel Theory to Nonconforming Finite Element Methods Panayot S. Vassilevski and Junping Wang

On the Third and Fourth Zolotarev Problems in the Complex Plane M.-P. Istace and J.-P. Thiran

W-Methods with Automatic Partitioning by Krylov Techniques for

Large Stiff Systems M. Buttner, B. A. Schmitt, and R. Weiner

A-Contractivity of Linearly Implicit Multistep Methods

Richard J. Charron and Min Hu

Numerical Stability and Efficiency of Penalty Algorithms

Jean-Pierre Dussault

On the Numerical Solution of the Euler-Lagrange Equations

Patrick J. Rabier and Werner C. Rheinboldt

From: publish@baltzer.nl (Baltzer Science Publishers)

Subject: Advances in Computational Mathematics

Date: Thu, 12 Jan 1995

Advances in Computational Mathematics

Contents Volume 2, No. III, 1994

A parallel implementation of the restarted GMRES iterative algorithm for nonsymmetric systems of linear equations

R. Dias da Cunha and T. Hopkins

Time-marching numerical schemes for the electric field integral equation on a straight thin wire P.J. Davies and D.B. Duncan

Acceleration property for the E-algorithm and an application to the summation of series M. Privost

Hankel operators and best Hankel approximation on the half-plane X. Li

Contents Volume 2, No. IV, 1994

Parallel globally adaptive quadrature on the KSR-1

J.M. Bull and T.L. Freeman

A planar minimax algorithm for analysis of co-ordinate measurements

D. Zwick

The solution of orthogonal Procrustes problems for a family of orthogonally invariant norms G.A. Watson

Numerical methods for eighth-, tenth- and twelfth-order eigenvalue problems arising in thermal instability

E.H. Twizell, A. Boutayeb and K. Djidjeli

Convexity of parametric Bezier surfaces in terms of Gaussian curvature signatures Z. Cheng and C.K. Chui

A general extrapolation procedure revisited

C. Brezinski and M. Redivo-Zaglia

On local and global sigma-pi neural networks. A common link

B. Lenze

Contents Volume 3, No. I-II, 1995

Two-scale symbol and autocorrelation symbol for B-splines with multiple

knots G. Plonka

Perturbed collocation and symplectic RKN methods G. Ramaswami

An algebraic approach to approximate evaluation of a polynomial on a set of real points V.Y. Pan

An introduction to second degree forms P. Maroni

A unified approach to B-spline recursions and knot insertion, with application to new recursion formulas G. Walz

A mixed finite element for the Stokes problem using quadrilateral elements M. Farhloul and M. Fortin

Evaluation of a boundary integral representation for the conformal mapping of the unit disk onto a simply-connected domain S.N. Chandler-Wilde, J. Levesley and D.M. Hough

Characterization of compactly supported refinable splines W. Lawton, S.L. Lee and Z. Shen

Curve design with rational Pythagorean-hodograph curves H. Pottmann

Submissions of articles and proposals for special issues are to be addressed to the Editor-in-Chief:

John C. Mason
School of Computing and Mathematics, University of Huddersfield,
Queensgate, Huddersfield, HD1 3DH, United Kingdom
E-mail: j.c.mason@hud.ac.uk

Requests for FREE SPECIMEN copies and orders for Advances in Computational Mathematics are to be sent to: E-mail: publish@baltzer.nl

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA Contents
Date: Mon, 16 Jan 1995

LINEAR ALGEBRA and its APPLICATIONS
Contents Volume 214

Diagonals of Matrices Stochastically Similar to a Given Matrix
David London

A Question of Guralnick About Reflexive Algebras
Songqing Ding and William H. Gustafson

The Finiteness Conjecture for the Generalized Spectral Radius of a Set of Matrices J. C. Lagarias and Y. Wang

Contragredient Equivalence: A Canonical Form and Some Applications
Roger A. Horn and Dennis I. Merino

A Note on the Coefficient of Ergodicity of a Column-Allowable Nonnegative Matrix M. Artzrouni and X. Li

Estimating Covariance in a Growth Curve Model
Chi Song Wong, Joe Masaro, and Weicai Deng

Shape Identities in Genetic Algebras
Roberto Costa

An Estimate for the Nonstochastic Eigenvalues of Doubly Stochastic
Matrices Miroslav Fiedler

Caratheodory Sequence Parametrizations of Potapov-Normalized Full-Rank
Jq-Elementary Factors B. Fritzsche, B. Kirstein, and V. Krug

A Proof of the Generalized Picard's Little Theorem Using Matrices
Wayne W. Chen

Condition Numbers and Their Condition Numbers
Desmond J. Higham

Faces of Convex Sets and Minkowski Additive Selections
Krzysztof Przeslawski

On Minimizing the Largest Eigenvalue of a Symmetric Matrix
Michael K. H. Fan and Batool Nekooie

Factorization Properties of Lattices Over the Integers
Azaria Paz and Mody Lempel

Rota's Theorem and Heinz Inequalities
Masatoshi Fujii and Ritsuo Nakamoto

BOOK REVIEW: Review of Matrices: Methods and Applications, by Stephen
Barnett Robert Grone
----- end -----

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Question: First-Kind Integral Equations with Layers
Symposium on Inverse Problems: Geophysical Applications
Table of Contents: SIAM Journal on Control and Optimization
Table of Contents: SIAM Journal of Optimization
Table of Contents: SIAM Journal on Scientific Computing
Table of Contents: Journal of Computing and Information
Table of Contents: Numerical Algorithms

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu

From: Brian Borchers <borchers@prism.nmt.edu>
Subject: Fredholm integral equations of the first kind with layers?
Date: Mon, 16 Jan 1995

I'm currently working on a problem that reduces to a Fredholm integral equation of the first kind:

$$m(z) = \int_a^b K(x, z) f(x) dx$$

In some cases, the unknown $f(x)$ is known to be relatively smooth, and second order Tikhonov regularization gives good solutions.

In other cases, the solution $f(x)$ is known to be smooth within each of two layers. However, there is a sharp discontinuity in the solution at the layer boundary, and I don't know where the boundary between the two layers is. For example, $f(x)$ might decrease smoothly from 20 at $x=0$ to 10 at $x=1.2$, and then jump suddenly to 90 and then slowly increase from there.

If I try Tikhonov regularization on these problems, then as expected, the discontinuity is not really resolved.

I'm looking for references to any approaches that might be used to help find the boundary between the two layers and solve for $f(x)$. What about problems with multiple layers?

Brian Borchers
Department of Mathematics
New Mexico Tech
Socorro, NM 87801

borchers@nmt.edu
505-835-5813

From: flores@siam.org
Subject: Announcement
Date: Mon, 30 Jan 95

Announcing.....

Symposium on Inverse Problems: Geophysical Applications

Conducted by SIAM with the cooperation of Gesellschaft fur Angewandte Mathematik und Mechanik (GAMM)

December 16-19, 1995
Marriott Tenaya Lodge at Yosemite
Fish Camp, California

CALL FOR PARTICIPATION

This symposium is the second of a series of symposia on inverse problems and their applications. The first symposium held June 27-July 1, 1994 in St. Wolfgang, Austria focused on applications in diffusion processes. The second symposium will focus on the study of connections of gravitational, seismic, electromagnetic, and thermal fields, with the structure of our planet. These fields may be of natural origin, such as oscillations caused by earthquakes and telluric currents, or they may be induced as in seismic prospecting and geophysical prospecting by electrical means. The interpretation of geophysical data leads to inverse problems, i.e. from physical laws and the data of field measurements determine the characteristics of the medium.

The purpose of this symposium is to encourage interdisciplinary interaction among practitioners and theoreticians, with a focus on inverse problems of interest to science and industry. The development and applications of powerful computational and mathematical tools will be highlighted.

The symposium will take place at the Marriott's Tenaya Lodge -- a new world-class hotel surrounded by thousands of acres of national forest, and just minutes from the southern entrance to Yosemite Park. Tenaya Lodge allows you to visit Yosemite Park's Sierra Nevada. Miles of trails await the hiker and horseback rider; wagon rides with campfires; and downhill and cross-country skiing. There is something for everyone, and the scenery promises to be breathtaking. Yosemite is approximately a 4-hour drive from San Francisco, and a 1-hour shuttle ride from Fresno.

Symposium Themes

Groundwater Flow
Seismology
Geophysical Prospecting
Electromagnetic Waves

Who Will Attend?

The symposium will attract engineers, mathematicians, and scientists from universities, industry, and government who are engaged in research in geophysics.

Organizing Committee

Heinz W. Engl (Co-chair)
Institut fur Mathematik
Johannes-Kepler Universitat, Austria

William Rundell (Co-chair)
Department of Mathematics
Texas A&M University, College Station

David L. Colton

Department of Mathematical Sciences
University of Delaware

Alfred Louis
Fachbereich Mathematik
Universität Saarlandes, Germany

INVITED PRESENTATIONS
(One-hour plenary talks)

Underground Imaging of Electrically Conducting Plumes
James G. Berryman Lawrence Livermore National Laboratory

A Geometrical Analysis of Duality Methods for the Inversion of Seismic
Data
Guy Chavent INRIA, France

Inverse Problems for Groundwater Contamination and Petroleum Applications
Richard E. Ewing Texas A&M University

Inverse Problems in Geodesy
Willi Freeden Universität Kaiserslautern, Germany

Inverse Problems for Model-Data Synthesis in the Atmospheric and Oceanic
Sciences Michael Ghil University of California, Los Angeles

(Title to be determined)
Kurt J. Marfurt Amoco Production Company Research Center

The Inversion of Body Wave Attributes Derived from Seismic Refraction
Data
Robert L. Nowack Purdue University

The Mathematics of Velocity Analysis
William W. Symes Rice University

Symposium Format

The symposium will be run in a workshop-like atmosphere. Each half-day will be highlighted by an hour plenary address followed by three or four related 30-minute presentations. This format will allow the results on recent research to be communicated and still allow ample time for discussion and interaction. An evening session of contributed papers will allow attendees, particularly students and young researchers, to discuss their research in a relaxed atmosphere.

How to Contribute

Contributed presentations in lecture format are invited in all areas of geophysics consistent with the symposium themes. A lecture format involves a 25-minute oral presentation with an additional five minutes for discussion. Contributors must submit a brief, 75-word abstract on a SIAM abstract form. To help in formatting your submission, plain TeX or LaTeX macros are available by sending your request to meetings@siam.org.

Deadline for submission of contributed abstracts: MAY 19, 1995.

Registration

The symposium program and registration material will be available in September, 1995. Please return this form to:

SIAM
3600 University City Science Center
Philadelphia, PA 19104-2688 U.S.A.
Telephone: 215-382-9800
Fax: 215-386-7999
E-Mail: meetings@siam.org

Symposium on Inverse Problems: Geophysical Applications
December 16-19, 1995
Marriott Tenaya Lodge at Yosemite
Fish Camp, California

Please print:

Name
 First Middle Initial Last
Organization
Department
Address
City State Zip
Country
Telephone
Fax
E-Mail

I am interested in giving a presentation. Send me a
 Plain TeX macro
 LaTeX macro
 for abstract submission.

I am interested in attending the symposium. Send me a
program, registration and hotel information.

I am a member of AGU GAMM SEG
 SIAM SPE Other

From: thomas@siam.org
Subject: SICON 33-3
Date: Tue, 24 Jan 95

SIAM Journal on Control and Optimization MAY 1995 Volume 33, Number 3
 CONTENTS

The Rendezvous Search Problem Steve Alpern

H_∞ Boundary Control with State Feedback: The Hyperbolic Case
Viorel Barbu

Almost Sure Stabilizability and Riccati's Equation of Linear Systems
with Random Parameters Philippe Bougerol

On Extremal Solutions of Controlled Nonlinear Filtering Equations
Vivek S. Borkar and Sunil Kumar

Strong Stability in Variational Inequalities Jiming Liu

The Disturbance Decoupling Problem for Systems over a Ring
G. Conte and A. M. Perdon

Control of Trunk Line Systems in Heavy Traffic Harold J. Kushner

On the Stabilization in Finite Time of Locally Controllable Systems by
Means of Continuous Time-Varying Feedback Law Jean-Michel Coron

Sampled-Data and Discrete-Time H_2 Optimal Control
H. L. Trentelman and A. A. Stoorvogel

A Geometric Approach to the Minimum Sensitivity Design Problem
Erik I. Verriest and W. Steven Gray

Discrete Approximations and Refined Euler-Lagrange Conditions for
Nonconvex Differential Inclusions Boris S. Mordukhovich

Singular Optimal Stochastic Controls I: Existence
Ulrich G. Haussmann and Wulin Suo

Singular Optimal Stochastic Controls II: Dynamic Programming
Ulrich G. Haussmann and Wulin Suo

An Existence Result in a Problem of the Vectorial Case of the
Calculus of Variations Arrigo Cellina and Sandro Zagatti

From: nelson@siam.org
Subject: SIAM J. OF OPTIMIZATION, VOL.5,NO.2, 1995, TABLE OF CONTENTS
Date: Wed, 25 Jan 95

TABLE OF CONTENTS

Why Broyden's Nonsymmetric Method Terminates on Linear Equations
Dianne P. O'Leary

A New Infinity-Norm Path Following Algorithm for Linear Programming
Kurt M. Anstreicher and Robert A. Bosch

A Potential Reduction Algorithm with User-Specified Phase I-Phase II
Balance for Solving a Linear Program from an Infeasible Warm Start
Robert M. Freund

An Implicit Filtering Algorithm for Optimization of Functions with Many
Local Minima P. Gilmore and C. T. Kelley

Indefinite Trust Region Subproblems and Nonsymmetric Eigenvalue
Perturbations
Ronald J. Stern and Henry Wolkowicz

A Reduced Hessian Method for Large-Scale Constrained Optimization
Lorenz Biegler, Jorge Nocedal, and Claudia Schmid

A Robust Trust-Region Algorithm with a Nonmonotonic Penalty Parameter
Scheme for Constrained Optimization Mahmoud El-Alem

A Class of Trust Region Methods for Nonlinear Optimization Problems
A. Sartenaer

Ladders for Travelling Salesmen Sylvia C. Boyd, William H. Cunningham,
Maurice Queyranne, and Yaoguang Wang

On the Convergence of Fenchel Cutting Planes in Mixed-Integer Programming
E. Andrew Boyd

Subdifferential Convergence to Stochastic Programs
John R. Birge and Liqun Qi

Proximal Decomposition on the Graph of a Maximal Monotone Operator
Philippe Mahey, Said Oualibouch, and Pham Dinh Tao

From: tschoban@siam.org
Subject: SISC 16-2 Table of Contents
Date: Tue, 24 Jan 95

SIAM Journal on Scientific Computing MARCH 1995, Volume 16, Number 2
CONTENTS

Solvability of General Differential Algebraic Equations
Stephen L. Campbell and E. Griepentrog

An Implementation of Multiple and Multivariate Fourier Transforms on
Vector Processors Markus Hegland

A New Family of Preconditioners for Domain Decomposition Mo Mu

Grandchild of the Frequency Decomposition Multigrid Method
J. E. Dendy, Jr. and C. C. Tazartes

The Solution of Nonstrictly Hyperbolic Conservation Laws May Be Hard to
Compute Aslak Tveito and Ragnar Winther

Matrix Decomposition Algorithms in Orthogonal Spline Collocation for
Separable Elliptic Boundary Value Problems
Bernard Bialecki and Graeme Fairweather

One-Dimensional Front Tracking Based on High Resolution Wave Propagation
Methods Randall J. Leveque and Keh-Ming Shyue

Ordering Strategies for Modified Block Incomplete Factorizations
Magolu Monga-Made

Stability of Parallel Triangular System Solvers Nicholas J. Higham

Preconditioning Nonsymmetric and Indefinite Capacitance Matrix Problems
in Domain Imbedding Wlodzimierz Proskurowski and Panayot S.
Vassilevski

Fourier Matrix Decomposition Methods for the Least Squares Solution of
Singular Neumann and Periodic Hermite Bicubic Collocation Problems
Bernard Bialecki and Karin A. Remington

An Improved Spectral Graph Partitioning Algorithm for Mapping Parallel
Computations Bruce Hendrickson and Robert Leland

Domain Decomposition Using Spectral Expansions of Steklov-Poincare
Operators Ramesh Natarajan

Timely Communications

A Further Note on Max-Min Properties of Matrix Factor Norms

L. Gurvits and A. Greenbaum

A Parallel Inertia Method for Finding Eigenvalues on Vector and SIMD Architectures John M. Conroy and Louis J. Podrazik

Test Matrices for Regularization Methods Per Christian Hansen

CONTENTS MARCH 1995, Volume 16, Number 2

Three-Dimensional Flow in a General Tube Using a Combination of Finite and Pseudospectral Discretisations
Roland Hunt

An Algorithm with Polylog Parallel Complexity for Solving Parabolic Partial Differential Equations G. Horton, S. Vandewalle, and P. Worley

The ODE Formulation of Hyperbolic PDEs Discretized by the Spectral Collocation Method Morten Bjorhus

Temporal Error Control for Convection-Dominated Equations in Two Space Dimensions M. Berzins

Fast Multiresolution Algorithms for Solving Linear Equations: A Comparative Study Francesc Arandiga, Vicente F. Candela, and Rosa Donat

A Fast Multigrid Algorithm for Isotropic Transport Problems I: Pure Scattering T. Manteuffel, S. McCormick, J. Morel, S. Oliveira, G. Yang

Overlapped Multicolor MILU Preconditioning
Takumi Washio and Ken Hayami

Piecewise Polynomial Collocation for Boundary Integral Equations
Kendall E. Atkinson and David Chien

Analysis of Preconditioning Techniques for Ill-Conditioned Toeplitz Matrices Fabio Di Benedetto

GMBACK: A Generalised Minimum Backward Error Algorithm for Nonsymmetric Linear Systems Ebrahim M. Kasenally

Iterative Algorithms for Orthogonal Spline Collocation Linear Systems
W. Sun

On Computing Objective Function and Gradient in the Context of Least Squares Fitting a Dynamic Errors-In-Variables Model
Jan M. ten Vregelaar

From: "M. Behara" <behara@mcmail.cis.mcmaster.ca>
Subject: Table of Contents: Journal of Computing and Information
Date: Sun, 22 Jan 1995

JOURNAL OF COMPUTING AND INFORMATION Volume 4 1994

Tractability and Strong Tractability of Multivariate Tensor Product Problems H. Wozniakowski

Average Case Approximation of Linear Functionals Based on Information
with
Deterministic Noise L. Plaskota

Charge-Oriented Modelling of Electric Circuits and Rosenbrock-Wanner
Methods M. G=81nther

Gauss' Adaptive Relaxation for the Multilevel Solution of Partial
Differential Equations on Sparse Grids. Pflaum and U. R=81de

Multilevel Approaches to Nonconforming Finite Element Discretizations of
Linear Second Order Elliptic Boundary Value Problems
B. Wohlmuth and R.H.W. Hoppe

Optimal Strategies of a Complex Pursuit-Evasion Game
R. Lachner, M.H. Breitner, and H.J. Pesch

Optimal Information and Optimal Linear Approximation in H^2 -Spaces of an
Annulus K. Wilderotter

Quadrature Errors for Functions with Derivatives of Bounded Variation
K. Petras

A Unified Asymptotic Probabilistic Analysis of Polyhedral Functionals: A
Survey K.-H. K=81fer

A Fast Parallel Lattice Reduction Algorithm A. Joux

Adaptive Direct Methods and Approximate Solution of Ill-Posed Problems
S.V. Pereverzev

[Note: Control characters appearing here are as received. -Ed]

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: NUMERICAL ALGORITHMS
Date: Tue, 17 Jan 1995

Contents Vol. 8, No. 1, 1994

Factorizations and construction of linear phase paraunitary filter banks
and higher multiplicity wavelets. R. Turcajova

Shift products and factorizations of wavelet matrices.
R. Turcajova and J. Kautsky

A hierarchically consistent, iterative sequence transformation.
H.H.H. Homeier

DQAINF: an algorithm for automatic integration of infinite oscillating
tails.
T.O. Espelid and K.J. Overholt

Multivariate polynomial interpolation under projectivities III:
Remainder formulas. G. Muelbach and M. Gasca

Finite element methods on piecewise equidistant meshes for interior
turning point problems. G. Sun and M. Stynes

The fundamentality of translates of a continuous function on spheres.
X. Sun

Linear best approximation using a class of k-major lp norms.
G.A. Watson

Contents Vol. 8, No. II-IV, 1994

Approximating scattered data with discontinuities. E. Arge and M. Floater

Cyclic reduction and FACR methods for piecewise Hermite bicubic orthogonal spline collocation. B. Bialecki

Numerical solution of positive control problem via linear programming. B.G Zaslavsky and A. Moskvina

DECUHR: an algorithm for automatic integration of singular functions over a hyperrectangular region. T.O. Espelid and A. Genz

A multiprojection algorithm using Bregman projections in a product space. Y. Censor and T. Elfving

Estimates in quadratic formulas. G.H. Golub and Z. Strakos

An algorithm for the generalized symmetric tridiagonal eigenvalue problem. K. Li, T-Y. Li and Z. Zeng

Parallelism across the steps in iterated Runge-Kutta methods for stiff initial value problems.

P.J. van der Houwen, B.P. Sommeijer and W.A. van der Veen

Two-point Pade approximants for formal Stieljes series.

S. Tokarzewski, J. Blawdziewicz and I. Andrianov

Additive Schwarz domain decomposition methods for elliptic problems on unstructured meshes. T.F. Chan and J. Zou

Fast parallel solution of the Poisson equation on irregular domains. D. Lee

Submissions of articles and proposals for special issues are to be addressed to the Editor-in-Chief:

Claude Brezinski
Laboratoire d'Analyse Numerique et d'Optimisation
UFR IEEA - M3
Universite des Sciences et Technologies de Lille
59655 Villeneuve d'Ascq Cedex
France
E-mail: brezinsk@omega.univ-lille1.fr

postal address:
Paris Drouot BP 18
75433 Paris Cedex 09
France

Requests for FREE SPECIMEN copies and orders for Numerical Algorithms are to be sent to: E-mail: publish@baltzer.nl

----- end -----

IPNet Digest Volume 2, Number 03 April 2, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

SPIE Conference on Ill-Posed Inverse Problems
Upcoming SIAM Meetings and Deadlines
Announcement: Industrial Mathematics Modeling Workshop
Table of Contents: SIAM Review
Table of Contents: SIAM Journal Numerical Analysis
Table of Contents: SIAM Journal on Scientific Computing
Table of Contents: Surveys on Mathematics for Industry
Table of Contents: Math. of Control, Signals, and Systems
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

Mail to ipnet-request@math.msu.edu

From: crj@sci2.cs.utah.edu (Chris Johnson)
Subject: SPIE Conf. on Ill-Posed Inverse Problems
Date: Wed, 29 Mar 1995

SPIE Conference on Experimental and Numerical Methods for Solving
Ill-Posed Inverse Problems: Medical and Nonmedical Applications

Monday-Tuesday 10-11 July 1995 SPIE Proceedings Vol. 2570

Conference Chairs: Randall L. Barbour, SUNY Health Science
Ctr./Brooklyn; Mark J. Carvlin, Bristol-Myers Squibb Co.; Michael
A. Fiddy, Univ. of Massachusetts/Lowell

Program Committee: David Isaacson, Rensselaer Polytechnic Institute; F.
Norman J. McCormick, Univ. of Washington; Michael V. Klibanov, Univ. of
North Carolina/Charlotte; Christopher R. Johnson, Univ. of Utah; Robert
V. McGahan, Rome Lab.

Conference Schedule:

Monday 10 July

SESSION 1 Mon. 8:00 to 9:40 am Imaging Modalities I
Chair: Randall L. Barbour

Inverse solutions for electric field imaging of the brain
D. Weinstein, C. R. Johnson

Unified fully 3D SPECT reconstruction algorithm based on analytical
expressions for the photon detection kernel
F. J. Beekman, C. Kamphuis, M. A. Viergever

Detection of leukemia using electromagnetic waves (Invited Paper)
D. Colton

Imaging of strongly scattering objects using a nonlinear filtering
technique

J. B. Morris, D. A. Pommet, M. A. Fiddy, R. V. McGahan

Imaging from back scattered data from strongly scattering targets
D. A. Pommet, M. A. Fiddy, U. H. Lammers, R. A. Marr, R. V. McGahan

SESSION 2 Mon. 9:40 am to Noon Imaging Modalities II
Chair: Michael A. Fiddy

Explicit inverse radiative transfer algorithm for estimating the spatial
distributions of embedded sources from external radiance measurements
L. J. Holl, N. J. McCormick

MR-assisted optical tomography
S. S. Barbour, R. L. Barbour, J. Chang, P. C. Koo

Electric images of thinking in the human brain: avoiding an
ill-conditioned problem (Invited Paper) A. Gevins

Fluorescence optical tomography
R. L. Barbour, H. L. Graber, R. Aronson, J. Chang

Inverse methods for the retrieval of ionospheric model parameters
D. W. Schulze

SESSION 3 Mon. 1:30 to 3:20 pm Methods for Solving Ill-Posed
Problems I
Chair: David Isaacson

Geometry and ill-posed inverse problems (Invited Paper)
P. C. Sabatier

Convergent algorithms in diffusion tomography
M. V. Klivanov

Image reconstruction of targets in strongly scattering media using born
iterative method
Y. Yao, Y. Wang, W. Zhu, J. Chang, H. L. Graber, R. L. Barbour

Estimation of smooth integral functions in emission tomography
A. Kuruc

Trade-off between measurement residual and reconstruction error in
inverse problems with prior information P. Hughett

SESSION 4 Mon. 3:50 to 5:50 pm Methods for Solving Ill-Posed
Problems II
Chair: N. J. McCormick

Problems in electrical impedance imaging D. Isaacson

General solution to an inverse problem for the diffusion approximation
of the radiative transfer equation V. S. Ladyzhets

Regularization technique for restoration of x-ray fluoroscopic images
R. A. Close, J. S. Whiting

Numerical study of nonlinear inverse problems for active suppression for

harmonic acoustic fields: antiphase noise reduction
G. V. Alekseev, E. N. Martinenko, E. G. Komarov

Regularization of inverse problems of microwave tomography in medicine
V. P. Yakubov, Y. K. Tarabrin, M. L. Masharuev

Deconvolution of SPECT images using morphological information
M. Gambaro, A. Schenone, M. Bertero, P. Boccacci

Tuesday 11 July

SESSION 5 Tues. 8:00 to 10:00 am Efficient Numerical Methods I
Chair: Christopher R. Johnson

Singular value decomposition: a diagnostic tool for ill-posed inverse
problems in optical computed tomography T. A. Lanen

Multigrid regularized least squares reconstruction based on wavelet
transform in optical tomography
W. Zhu, Y. Wang, J. Chang, R. L. Barbour

Automated emission tomography complex for plasma physics diagnostics
L. I. Poplevina, I. M. Tokmulin, B. Balatz

Numerical method of image reconstruction from the frequency-modulated
signal in diffusion tomography S. Gutman, M. V. Klivanov

Real inversion of a Laplace transform function
L. D'Amore, A. Murli

Imaging of multiple targets in dense scattering media
H. L. Graber, J. Chang, R. L. Barbour

SESSION 6 Tues. 10:30 am to 12:30 pm Efficient Numerical Methods
II
Chair: Robert V. McGahan

Computer architecture for context-driven image processing
V. K. Bykosky

Regularized cubic B-spline approximation for processing laser anemometry
data R. P. Bennell

Efficient forward calculation of photon migration in human tissue using
a multigrid method
Y. Yao, Y. Wang, W. Zhu, H. L. Graber, J. Chang, R. L. Barbour

Deconvolution of multiple images M. Piana, M. Bertero

Phase retrieval for imaging symmetric particles
R. P. Millane, W. J. Stroud

Multiresolution maximum entropy deconvolution of astronomical images
E. Pantin, J. Starck

POSTER SESSION 12:30 to 1:30 pm

*Posters-Tuesday The following papers will be displayed Tuesday in the
Exhibit Hall. Authors will be present during lunch from 12:30 to 1:30 pm.

*Reguladrization of inverse problem by singular value filtration
V. N. Kurashov, A. G. Chumakov, A. V. Kovalenko

*Methods of the calculation of laser radiation intensity within melanoma
in upper layers of human skin
I. V. Meglinsky, P. Y. Starukhin, S. R. Utz

*Stable solution of photon-count statistics inverse problem by means of
iterated operator eigenfunctions
V. N. Kurashov, A. V. Kurashov, A. G. Chumakhov

*Imaging of a stratified tissue using a hybrid method of optimization
approach and Green function technique, J. Ying, W. Sun

*Adaptive robust iterative algorithm of image reconstruction
V. P. Melnik, A. A. Zelensky, V. V. Lukin

*Regularized projectional algorithm for processing experimental data
N. Shcherbakova

*Diffraction and inverse diffraction for distorted lattices
W. J. Stroud, R. P. Millane

*Aspects of image reconstruction from nonuniform samples
R. P. Millane

SESSION 7 Tues. 2:00 to 3:20 pm To be announced
Chair: Mark J. Carvlin

Semidiscrete positron emission tomography
J. M. Anderson, B. A. Mair, M. Rao

Numerical fovea: efficient solution to discrete inverse problems
G. F. Dacquino, R. A. Fiorini, B. Cattaneo, A. Fabiani

Formulas for x-ray tomography D. S. Anikonov

Regularized method for inverse problem of diffusion tomography
G. N. Erokhin, M. V. Klibanov, L. N. Pestov

From: flores@siam.org
Subject: Brief Announcement
Date: Fri, 31 Mar 95

SIAM
Society for Industrial and Applied Mathematics
3600 University City Science Center
Philadelphia, PA 19104-2688

DATES TO REMEMBER...

APRIL 14, 1995 - Deadline for submission of minisymposium
proposals to 1995 SIAM Annual Meeting,
Charlotte, NC, October 23-26.

APRIL 14, 1995 - Deadline for advance registration to
attend 1995 SIAM Conference on Control

and Its Applications, St. Louis, MO
April 27-29.

- MAY 8, 1995 - Deadline for submission of abstracts to
1995 SIAM Conference on Geometric Design,
Nashville, TN, November 6-9.
- MAY 15, 1995 - Deadline for submission of abstracts to
1995 SIAM Annual Meeting, Charlotte, NC
October 23-26.
- MAY 19, 1995 - Deadline for submission of abstracts to
1995 Symposium on Inverse Problems:
Geophysical Applications, Yosemite, CA
December 16-19.

To receive your copy of the calls for papers, either the electronic
or
hard copy versions; to obtain the macros for submitting abstracts
electronically; to obtain minisymposium proposal forms; to register
or
obtain more information about SIAM conferences, contact SIAM now.
Telephone: 215-382-9800; Fax: 215-386-7999; E-mail:
meetings@siam.org
Gopher: gopher.siam.org World Wide Web: <http://www.siam.org>

From: tran@control.math.ncsu.edu (ht tran)
Subject: Industrial Mathematics Modeling Workshop Announcement
Date: Thu, 16 Mar 95

Announcing the

INDUSTRIAL MATHEMATICS MODELING WORKSHOP
FOR GRADUATE STUDENTS
August 7 - 16, 1995

Center for Research in Scientific Computation
North Carolina State University
Raleigh, North Carolina

FOREWORD

The Industrial Mathematics Modeling Workshop for Graduate Students, which is the fourth in the series, will take place at the Center for Research in Scientific Computation at North Carolina State University in Raleigh, North Carolina, 7-16 August 1995. This workshop is being held annually, the previous highly successful meetings was held at the University of Minnesota in 1992 and at the Claremont Colleges in 1993 and 1994. A description of the 1993 Claremont workshop can be found in SIAM NEWS, November, 1993 issue.

In line with the previous workshops the goals of this workshop are:

- * to expose 30 graduate students in mathematics and statistics to the challenging and exciting real-world problems from industry and government laboratories;
- * to introduce students to the team approach to problem solving.

Funding for this workshop has been requested with the National Security Agency and the Army Research Office. Additional support is anticipated from the Center for Research in Scientific Computation.

FORMAT

In the workshop the students will be divided into six teams to work on "industrial mathematics" problems brought on by experienced applied mathematicians. These problems are challenging, real-world problems from industry or applied science and require fresh, new insight for their formulation and solution. The problem presenters, primarily from industry and government laboratories, are being recruited and their names will be announced subsequently.

APPLICATION PROCEDURE

Graduate students in mathematics, applied mathematics, statistics or operations research can be nominated for this program by a faculty member by sending a letter of recommendation. In addition, the student is required to send in a copy of a recent transcript. THE DEADLINE FOR APPLICATION IS JUNE, 30. Students will be expected to finance their travel. The workshop will cover local living expenses for U.S. citizens and permanent residents.

ORGANIZERS

Ben Fitzpatrick (Center for Research in Scientific Computation)
Hien T. Tran (Center for Research in Scientific Computation)

CONTACT PERSON

Submit your complete applications or any inquiries you may have concerning this workshop to:

Hien T. Tran
Center For Research in Scientific Computation
Box 8205
North Carolina State University
Raleigh, NC 27695-8205
Telephone: (919) 515-3265
Fax: (919) 515-3798
e-mail: tran@control.math.ncsu.edu

From: nelson@siam.org
Subject: SIAM Review
Date: Tue, 28 Feb 95

SIAM Review, Vol. 37, No. 1 MARCH 1995

Table of Contents

Articles Mathematical Morphology: A Modern Approach in Image Processing
Based on Algebra and Geometry Henk J. A. M. Heijmans

A Chaotic Exploration of Aggregation Paradoxes Donald G. Saari

Anti-plane Shear Deformations in Linear and Nonlinear Solid Mechanics
C. O. Horgan

Case Study from Industry
Optimizing Continuous Caster Product Dimensions: An Example of a
Nonlinear Design Problem in the Steel Industry
Francis J. Vasko and Kenneth L. Stott

Classroom Notes in Applied Mathematics
Sensible Rules for Remembering Duals--the S-O-B Method
Arthur T. Benjamin

How Many Shuffles to Mix a Deck? Joseph B. Keller

A Resonant Line Structure Consisting of Rational Right Triangles
Sid Deutsch

A Unified Proof for the Convergence of Jacobi and Gauss-Seidel Method
Roberto Bagnara

Problems and Solutions

Book Reviews

Global Behavior of Nonlinear Difference Equations (V. L. Kocic and
G. Ladas) Ravi P. Agarwal

Network Flows (R. K Ahuja, T. L. Magnanti, and J. B. Orlin)
Michael O. Ball

Catalan's Conjecture (P. Ribenboim) J. W. S. Cassels

Evolutionary Integral Equations and Applications (J. Pruss) C.
Corduneanu

Catastrophe Theory (Domenico P. L. Castrigiano and Sandra A. Hayes)
David Chillingworth

Moving-Grid Methods for Time-Dependent Partial Differential Equations
(P. A. Zegeling) Thomas K. DeLillo

Schur's Algorithm and Several Applications (M. Bakonyi and
T. Constantinescu) A. E. Frazho

Numerical Solution of Ordinary Differential Equations (L.F. Shampine)
I. Gladwell

Partial Differential Equations in Classical Mathematical Physics
(I. Rubinstein and L. Rubinstein) Ronald B. Guenther

Viscous Vortical Flows (L. Ting and R. Klein) Max D. Gunzburger

Codes, Puzzles, and Conspiracy (Dennis Shasha) Glen Richard Hall

Computational Geometry in C (J. O'Rourke) Christoph M. Hoffmann

The Essence of Chaos (E. N. Lorenz) Philip Holmes

Operator-Limit Distributions in Probability Theory (Z. J. Jurek and
J. D. Mason) W. N. Hudson

Introduction to Maple (Andre Heck) Wolfram Koepf

Singularity Theory and Equivariant Symplectic Maps (Thomas Bridges and
Jacques E. Furter) Kenneth R. Meyer

Random Series and Stochastic Integrals: Single and Multiple
(Stanislaw Kwapien and Wojbar A. Woyczynski) Philip Protter

Ray Methods for Nonlinear Waves in Fluids and Plasmas (A. M. Anile,
J. K. Hunter, P. Pantano, and G. Russo) Jeffrey Rauch

A First Course in Discrete Dynamical Systems (R. A. Holmgren)
James T. Sandefur

Completeness of Root Functions of Regular Differential Operators
(S. Yakubov) Hans Triebel

Selected Collections / Chronicle

From: tschoban@siam.org
Subject: SINUM 32-2 Table of Contents
Date: Tue, 28 Feb 95

SIAM Journal on Numerical Analysis APRIL 1995, Volume 32, Number 2
Table of Contents

Preconditioning Legendre Spectral Collocation Approximations to Elliptic
Problems Seymour V. Parter and Ernest E. Rothman

On Error Estimates of the Penalty Method for Unsteady Navier-Stokes
Equations Jie Shen

A Characteristics-Mixed Finite Element Method for Advection-Dominated
Transport Problems Todd Arbogast and Mary F. Wheeler

A Galerkin-Characteristic Algorithm for Transport-Diffusion Equations
Rodolfo Bermejo

Finite Element Analysis of the One-Dimensional Full Drift-Diffusion
Semiconductor Model Zhangxin Chen

A Simple Proof of Convergence for an Approximation Scheme for Computing
Motions by Mean Curvature Guy Barles and Christine Georgelin

A Fast Multilevel Algorithm for Integral Equations C. T. Kelley

A Multilevel Technique for the Approximate Solution of Operator Lyapunov
and Algebraic Riccati Equations I. G. Rosen and Chunming Wang

Convergence of Vortex Methods for Three-Dimensional Euler Equations in
Bounded Domains Ying Lung-An

On the Fundamental Solutions for the Difference Helmholtz Operator
Adam Zemla

Stepwise Stability for the Heat Equation with a Nonlocal Constraint
Baruch Cahlon, Devadatta M. Kulkarni, and Peter Shi

Approximate Solution of Second Kind Integral Equations on Infinite
Cylindrical Surfaces Andrew T. Peplow and Simon N. Chandler-Wilde

On Optimal Solution of Interval Linear Equations Sergey P. Shary

A Practical Geometrically Convergent Cutting Plane Algorithm
M. A. H. Dempster and R. R. Merkovsky

C^1 -Surface Splines Jorg Peters

Cubature for the Sphere and the Discrete Spherical Harmonic Transform
Mark Taylor

Order-Preserving Mesh Spacing for Compound Quadrature Formulas and
Functions with Endpoint Singularities P. Kohler

From: tschoban@siam.org
Subject: SISC 16-3 Table of Contents
Date: Tue, 28 Feb 95

SIAM Journal on Computing MAY 1995, Volume 16, Number 3
Table of Contents

Three-Dimensional Flow in a General Tube Using a Combination of Finite
and Pseudospectral Discretisations Roland Hunt

An Algorithm with Polylog Parallel Complexity for Solving Parabolic
Partial Differential Equations G. Horton, S. Vandewalle, P. Worley

The ODE Formulation of Hyperbolic PDEs Discretized by the Spectral
Collocation Method Morten Bjorhus

Temporal Error Control for Convection-Dominated Equations in Two Space
Dimensions M. Berzins

Fast Multiresolution Algorithms for Solving Linear Equations: A
Comparative Study Francesc Arandiga, Vicente F. Candela, Rosa Donat

A Fast Multigrid Algorithm for Isotropic Transport Problems I: Pure
Scattering T. Manteuffel, S. McCormick, J. Morel, S. Oliveira, G. Yang

Overlapped Multicolor MILU Preconditioning T. Washio and K. Hayami

Piecewise Polynomial Collocation for Boundary Integral Equations
Kendall E. Atkinson and David Chien

Analysis of Preconditioning Techniques for Ill-Conditioned Toeplitz
Matrices Fabio Di Benedetto

GMBACK: A Generalised Minimum Backward Error Algorithm for Nonsymmetric
Linear Systems Ebrahim M. Kasenally

Iterative Algorithms for Orthogonal Spline Collocation Linear Systems
W. Sun

On Computing Objective Function and Gradient in the Context of Least
Squares Fitting a Dynamic Errors-In-Variables Model
Jan M. ten Vregelaar

From: "PROF.HEINZ W. ENGL" <engl@indmath.uni-linz.ac.at>
Subject: Surveys on Mathematics for Industry
Date: Tue, 14 Mar 1995

Surveys on Mathematics for Industry, Vol4. No.4 (Springer-Verlag
Vienna/N.Y.)

Table of Contents

Numerical Tools for Scientific Computation with Applications to Flow,
Turbulence and Combustion
H.Guillard, M.Mallet, J.Periaux (Guest Editors of this Volume)

Automatic Mesh Generator Using the Delaunay Voronoi Principle
P.George

Mesh Generation for Aerospace CFD Applications
E.Hirschel, W.Schwarz

Generation, Optimization, and Adaption of Multiblock Structured Grids
for Complex Configurations O.Jacquotte, F.Montigny, G.Coussement

A Stabilized Finite Element Formulation for the Reynolds-Averaged
Navier-Stokes Equations T.Hughes, K.Jansen

Effective Algorithms for Spectral Methods with Applications
P.Gervasio, A.Quarteroni, L.Valdettaro

Selected Contributions to the Field of CFD by the Thermal Turbomachinery
Laboratory K.Papailiou

Visulaization Techniques for Turbulence in CFD J.Hanson

Heinz W.Engl, Managing Editor

From: Eduardo Sontag <sontag@control.rutgers.edu>
Subject: TABLE OF CONTENTS, Math of Control, Signals, and Systems #7.2
Date: Tue, 21 Feb 1995

TABLE OF CONTENTS, Math of Control, Signals, and Systems
Volume 7, Number 2

Propagating the input to state stability property through integrators
and applications Z.P.Jiang, L.Praly, and A.R.Teel

Stochastic Averaging Analysis of a Steepest Descent Type Adaptive Time
Delay Estimation Algorithm X. Kong and V. Solo

A Time Varying Beurling-Lax Theorem and a Related Interpolation Problem
Gilead Tadmor

Interconnections and symmetries of linear differential systems
Fabio Fagnani and Jan C. Willems

***** REMINDER: The new address for submissions is: *****

Prof. J.H. van Schuppen
Editor, MCSS
CWI
P.O. Box 94079
1090 GB Amsterdam, The Netherlands

E-mail inquiries regarding submissions should be addressed to:
mcss@cwil.nl

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA-Contents, Volumes 215, 216, 218
Date: Sun, 26 Mar 1995

LINEAR ALGEBRA AND ITS APPLICATIONS
Table of Contents

Volume 215

Critical Points of Matrix Least Squares Distance Functions
Uwe Helmke and Mark A. Shayman

Hermitian Completions of Band Matrices and Applications
Johan Kos and Hugo J. Woerdeman

Criteria for Invertibility of Diagonally Dominant Matrices
F. O. Farid

On Perturbation Bounds for the QR Factorization Ji-guang Sun

Lipschitz Spectrum Preserving Mappings on Algebras of Matrices
Janez Mrcun

An Alternative Theorem for Quadratic Forms and Extensions
J. P. Crouzeix, J. E. Martinez-Legas, and A. Seeger

The Length Problem for a Sum of Idempotents Jin-Hsien Wang

Decomposition of the Infinite Companion and Interpolation
Vlastimil Ptak

An Observation on the Hadamard Product of Hermitian Matrices
Miroslav Fiedler and Thomas L. Markham

Multiplicative Complexity of Direct Sums of Quadratic Systems
Nader H. Bshouty

Block-Iterative Surrogate Projection Methods for Convex Feasibility
Problems Krzysztof C. Kiwiel

Scaled Toda-like Flows Moody T. Chu

On a Conjecture by Goldberg and Newman Dursun Tasci

Volume 216

Circulant Preconditioners With Unbounded Inverses
E. E. Tyrtyshnikov

The Geometry of Basic, Approximate, and Minimum-Norm Solutions of Linear
Equations Jianming Miao and Adi Ben-Israel

Generalized Inverses of Hankel and Toeplitz Mosaic Matrices
Georg Heinig

Random-Walk Interpretations of Classical Iteration Methods
Jonathan Goodman and Neal Madras

MacWilliams Identities and Coordinate Partitions Juriaan Simonis

On Two-Parameter Families of Symmetric Matrices Roy Meshulam

Estimating Hadamard Operator Norms, With Application to Triangular
Truncation G. A. Watson

Courtship and Linear Programming Hernan G. Abeledo, Uriel G. Rothblum

What Polynomial Satisfies a Given Endomorphism?

Jose A. Hermida-Alonso and Miriam Pisonero

Trace Minimization and Definiteness of Symmetric Pencils

J. Kovac-Striko and K. Veselic

A-Optimization of Exact First-Order Saturated Designs for $N \equiv 1 \pmod{4}$

Observations C. Moyssiadis, S. Chadjiconstantinidis, S. Kounias

Eigenvalues and the Smith Normal Form Joseph J. Rushanan

Proof of a Conjecture About the Exponent of Primitive Matrices

Jian Shen

A Generalization of Muirhead's Theorem Boris Kimelfeld

The Distribution of Eigenvalues of Graphs Dasong Cao and Hong Yuan

Permanental Mates and Hwang's Conjecture

C. S. Karuppanchetty and S. Maria Arulraj

Positive Linear Maps Between Matrix Algebras Which Fix Diagonals

Seung-Hyeok Kye

Hybrid Norms and Bounds for Overdetermined Linear Systems

Arnold Neumaier

Matrices Associated With Multiplicative Functions

Keith Bourque and Steve Ligh

Volume 218

An Identity for Matching and Skew-Symmetric Determinant

Kazuo Murota

Feedback Invariants for Linear Dynamical Systems Over a Principal Ideal

Domain Jose A. Hermida-Alonso, M. Pilar Perez, Tomas Sanchez-Giralda

On a Maximum Principle for Inverse Monotone Matrices

C. Turke and M. Weber

Recursive Solution of Cauchy-Vandermonde Systems of Equations

Georg Heinig and Karla Rost

Spaces of Hankel Matrices Over Finite Fields Roy Meshulam

Structures des Algebres de Bernstein Artibano Micali, Moussa Ouattara

Invariance and Commutativity Properties of Some Classes of Solutions of
the Matrix Differential Equation $X(t)X^{-1}(t) = X^{-1}(t)X(t)$

Jean-Claude Evard

Characteristic Polynomials of Straffin Digraphs David C. Fisher

Symmetry Properties of and Reduction Principles for Divisibility
Relations Between the Invariant Factors of Products of Holomorphic

Matrix Functions G. P. A. Thijsse

Regular Representations of Semisimple Algebras, Separable Field Extensions, Group Characters, Generalized Circulants, and Generalized Cyclic Codes David Chillag

Polytopes Related to the Picard Group B. Monson and Asia Ivic Weiss

Best-Conditioned Circulant Preconditioners Raymond H. Chan, C. K. Wong

On the Minors of an Incidence Matrix and Its Smith Normal Form
Jerrold W. Grossman, Devadatta, M. Kulkarni, and Irwin E. Schochetman

Invariants of Vector-Valued Bilinear and Sesquilinear Forms
Thomas Garrity and Robert Mizner

Geometry and the Norms of Hadamard Multipliers
Carl C. Cowen, Kelly E. Debro, and Peter D. Sepanski

Variational Principles for Indefinite Eigenvalue Problems
Paul Binding and Qiang Ye

On an Inverse Eigenvalue Problem for Unitary Hessenberg Matrices
Gregory S. Ammar and Chunyang He

Perturbations of the Eigenprojections of a Factorized Hermitian Matrix
Ivan Slapnicar and Kresimir Veselic
----- end -----

IPNet Digest Volume 2, Number 04 May 2, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Abstract Deadline for Symposium on Inverse Problems:
Geophysical Applications
Table of Contents: SIAM Review
Table of Contents: SIAM Journal on Numerical Analysis
Table of Contents: SIAM Journal on Scientific Computing,
Table of Contents: SIAM Journal on Applied Mathematics
Table of Contents: Mathematics of Control, Signals, and Systems
Table of Contents: Journal of Math. Systems, Estimation, Control
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu

From: IPNet
Subject: Abstract deadline for Symposium on Inverse Problems
Date: Tue, 2 May 1995

R E M I N D E R

MAY 19, 1995 - Deadline for submission of contributed abstracts for:

Symposium on Inverse Problems: Geophysical Applications
December 16-19, 1995
Marriott Tenaya Lodge at Yosemite
Fish Camp, California

Conducted by SIAM with the cooperation of Gesellschaft fur Angewandte
Mathematik und Mechanik (GAMM)

For further information, please see the IPNet Digest, Volume 2, Number 2
(February 21, 1995), or send e-mail to: meetings@siam.org.

From: nelson@siam.org
Subject: SIAM REVIEW, VOL. 37, NO. 2, JUNE 1995 TABLE OF CONTENTS
Date: Thu, 27 Apr 95

SIAM Review, Vol. 37, No. 2, June 1995
Table of Contents

Software Libraries for Linear Algebra Computations on High Performance
Computers Jack J. Dongarra and David W. Walker

A Survey of the Maximum Principles for Optimal Control Problems with
State Constraints
Richard F. Hartl, Suresh P. Sethi, and Raymond G. Vickson

Stabilization of the Inverted Linearized Pendulum by High Frequency
Vibrations Mark Levi and Warren Weckesser

Finite Catenary and the Method of Lagrange K. Veselic

CLASSROOM NOTE IN APPLIED MATHEMATICS

A Nonlinear Programming Algorithm for Hospital Management
Frank H. Mathis and Lenora Jane Mathis

PROBLEMS AND SOLUTIONS

BOOK REVIEWS

An Introduction to Nonlinear Partial Differential Equations
(J. D. Logan) Karen Ames

Numerical Solution of Sturm-Liouville Problems (John D. Pryce)
Alan L. Andrew

Time Series: Forecasting, Simulation, Applications (Gareth Janacek and
Louise Swift) David F. Findley

Introduction to Multidimensional Integrable Equations
(B. G. Konopelchenko) J. D. Gibbon

General Pattern Theory: A Mathematical Study of Regular Structures
(U. Grenander) Daniel Keenan

Non-Standard Rank Tests (A. Janssen and D. M. Mason)
Jana Jureckova

Markov Models and Optimization (M. H. A. Davis) Suzanne Lenhart

Linear Partial Differential Operators in Gevrey Spaces (Luigi Rodino)
Otto Liess

Fundamentals of Grid Generation (P. Knupp and S. Steinberg)
C. Wayne Mastin

Duality and Perturbation Methods in Critical Point Theory (N. Ghoussoub)
Jean Mawhin

Mathematical Computational Techniques for Multilevel Adaptive Methods
(U. Rude) Steve McCormick

Normal Forms and Bifurcation of Planar Vector Fields
(Shee-Nee Chow, Chengzhi Li, and Duo Wang) Kenneth R. Meyer

Model-Free Curve Estimation (M. E. Tartar and M. D. Lock) Guy Nason

Numerical Solutions of the Euler Equations for Steady Flow Problems
(Albrecht Eberle, Arthur Rizzi, and Ernst Heinrich Hirschel)
Paul D. Orkwis

Numerical Solution of Stochastic Differential Equations
(Peter E. Kloeden and Eckhard Platen) Matthias Gelbrich & Werner Romisch

Box Splines (C de Boor, K. Hollig, and S. Riemenschneider) Amos Ron

Numerical Hamiltonian Problems (J. M. Sanz-Serna and M. P. Calvo)
Robert D. Skeel

The Couette-Taylor Problem (Pascal Chossat and Gerard Iooss)
Juergen Scheurle

Nonlinear Dynamics and Chaos: With Applications to Physics, Biology,
Chemistry, and Engineering (Steven H. Strogatz) Douglas S. Shafer

The Fuzzy Systems Handbook: A Practitioner's Guide to Building, Using, and
Maintaining Fuzzy Systems (Earl Cox) Rod Taber

SELECTED COLLECTIONS

CHRONICLE

From: tschoban@siam.org
Subject: SINUM 32-3 Table of Contents
Date: Fri, 21 Apr 95

SIAM Journal on Numerical Analysis JUNE 1995, Volume 32, Number 3
Table of Contents

Convergence of the Finite Volume Method for Multidimensional
Conservation Laws B. Cockburn, F. Coquel, and P. G. Lefloch

Adaptive Finite Element Methods for Parabolic Problems II: Optimal
Error Estimates in L^2 and L^1 Kenneth Eriksson and Claes Johnson

A Numerical Study of a Rotationally Degenerate Hyperbolic System.
Part II. The Cauchy Problem Heinrich Freistuhler and E. Bruce Pitman

Convergence of the Variable-Elliptic-Vortex Method for Euler Equations
Zhen-Huan Teng, Lung-An Ying, and Pingwen Zhang

Numerical Viscosity and Convergence of Finite Volume Methods for
Conservation Laws with Boundary Conditions
S. Benharbit, A. Chalabi, and J. P. Vila

Implicit-Explicit Methods for Time-Dependent Partial Differential
Equations Uri M. Ascher, Steven J. Ruuth, and Brian T. R. Wetton

A Comparison of Convergence Rates for Godunov's Method and Glimm's
Method in Resonant Nonlinear Systems of Conservation Laws
L. Lin, J. B. Temple, and J. Wang

Suppression of Oscillations in Godunov's Method for a Resonant
Non-Strictly Hyperbolic System
Lin Longwei, Blake Temple, and Wang Jinghua

Mixed Finite Element Methods for Nonlinear Second-Order Elliptic
Problems Eun-Jae Park

Convergence of a Crystalline Algorithm for the Motion of a Simple
Closed Convex Curve by Weighted Curvature Pedro Martins Girao

On Algorithms for Nonconvex Optimization in the Calculus of Variations

Ling Ma and Noel J. Walkington

Nystrom's Method and Iterative Solvers for the Solution of the
Double-Layer Potential Equation Over Polyhedral Boundaries
A. Rathsfeld

Numerical Calculation of Center Manifolds for a Class of
Infinite-Dimensional Systems with Applications Ma Fuming

Two-Dimensional Quadrature for Functions with a Point Singularity on a
Triangular Region Yajun Yang and Kendall E. Atkinson

From: tschoban@siam.org
Subject: SISC 16-4 Table of Contents
Date: Fri, 21 Apr 95

SIAM Journal on Scientific Computing July 1995, Volume 16, Number 4
Table of Contents

A Front Tracking Method for Compressible Flames in One Dimension
James Hilditch and Phillip Colella

Multidomain Collocation Methods for the Stream Function Formulation
of the Navier-Stokes Equations Timothy N. Phillips and Alaeddin Malek

A Fixed Domain Method for Injection Governed by the Stokes Equations
L. L. Stell and S. F. Shen

Adaptive Mesh Refinement for Wave Propagation in Nonlinear Solids
John A. Trangenstein

An Adaptive Algebraic Multigrid for Reactor Criticality Calculations
Leonid Yu. Zaslavsky

A Space-Time Multigrid Method for Parabolic Partial Differential
Equations G. Horton and S. Vandewalle

Multipole Translation Theory for the Three-Dimensional Laplace and
Helmholtz Equations Michael A. Epton and Benjamin Dembart

A Family of Numerical Schemes for the Computation of Elastic Waves
Alain Sei

An Iterative Method for Nonsymmetric Systems with Multiple Right-Hand
Side V. Simoncini and E. Gallopoulos

Efficient Sparse Cholesky Factorization on a Massively Parallel SIMD
Computer Fredrik Manne and Hjalmtyr Hafsteinsson

A Note on Preconditioned Block Toeplitz Matrices Xiao-Qing Jin

The Instability of Parallel Prefix Matrix Multiplication
Roy Mathias

Rational Multiple Criterion Approximation and Rational Complex
Approximation by Differential Correction-Type Algorithms
G. Cortelazzo, G. A. Mian, and M. Morandini

Locally Corrected Multidimensional Quadrature Rules for Singular

Functions John Strain

From: thomas@siam.org
Subject: SIAP 55-3
Date: Thu, 06 Apr 95

SIAM JOURNAL ON Applied Mathematics JUNE 1995 Volume 55, Number 3
 Table of Contents

On the Oseen Drag on a Sphere A. J. Weisenborn and B. I. M. ten Bosch

Expansions in Terms of Moments of Time-Dependent, Moving Charges and
Currents Marijan Ribaric and Luka Sustersic

Convergence of the 2x2 Godunov Method for a General Resonant
Nonlinear Balance Law Eli Isaacson and Blake Temple

The Broadwell Model in a Box: Strong L^1 -Convergence to Equilibrium
Leif Arkeryd and Reinhard Illner

Maximum Principles for a Class of Conservation Laws
Helge Holden, Nils Henrik Risebro, and Aslak Tveito

A Unusual Moving Boundary Condition Arising in Anomalous Diffusion
Problems D. A. Edwards and D. S. Cohen

Identification of a Core from Boundary Data Wolfgang Ring

On Emission Tomography of Inhomogeneous Media
Vladimir A. Sharafutdinov

A Note on the Differential Inversion Method of Hohlfeld et al.
A. S. Vasudeva Murthy

The Continuation Approach: A General Framework for the Analysis and
Evaluation of Singular and Near-singular Integrals
Dan Rosen and Donald E. Cormack

Global Stability for a Class of Predator-Prey Systems
Sze-Bi Hsu and Tzy-Wei Huang

Time-Dependent Behavior of Fluid Buffer Models with Markov Input
and Constant Output Rates Thomas M. Chen and Vijay K. Samalam

On the Effect of Measuring a Self-similar Process Peter Hall

Asymptotic Distribution of Exit Times for Small-Noise Diffusions
Alain Simonian

Image Segmentation by Variational Methods: Mumford and Shah
Functional and the Discrete Approximations Antonin Chambolle

Erratum to the Paper: First-Order Corrections to the Homogenized
Eigenvalues of a Periodic Composite Medium [SIAM J. Appl. Math., 53
(1993), pp. 1636-1668] Fadil Santosa and Michael Vogelius

From: "Lieke v.d. Eersten-Schultze" <Lieke.Schultze@cwi.nl>

Subject: MCSS 7.3
Date: Thu, 13 Apr 1995

Contributed by Jan H. van Schuppen (J.H.van.Schuppen@cwi.nl)

Mathematics of Control, Signals, and Systems (MCSS) Volume 7, Issue 3
Table of Contents

On the Stabilization of Controllable and Observable Systems by an Output
Feedback Law J.-M. Coron

Singular Extremals on Lie Groups R. Montgomery

Feedback Linearization and Driftless Systems P. Martin and R. Rouchon

Liapunov Functions and Stability Criteria for Nonlinear Systems with
Multiple Critical Eigenvalues Jyun-Horng Fu

REMINDER
The new address for submissions is:

J.H. van Schuppen
Co-Editor MCSS
CWI
P.O. Box 94079
1090 GB Amsterdam
The Netherlands

E-mail inquires regarding submission should be addressed
to: mcss@cwi.nl.

From: Elizabeth Hyman <Hyman@world.std.com>
Subject: Journal of Mathematical Systems, Estimation and Control
Date: Tue, 4 Apr 1995

Submitted by Edwin F. Beschler <Beschler@spint.compuserve.com>

Journal of Mathematical Systems, Estimation and Control Vol. 5, No. 2,
1995

Table of Contents

Modelling and controllability of plate-beam systems
J.E. Lagnese

On relations between Schmidt pairs arising in robust control
Andrea Gombani

Errata: Chain-scattering representation, J-lossless factorization and H
control Hidenori Kimura

Chain-scattering representation, J-lossless factorization and H control
Hidenori Kimura

Errata Summary: Necessary and sufficient conditions for nonlinear worst

case (H-infinity) control and estimation Arthur J. Krener

Summary: H control of nonlinear systems with sampled measurement
Sadanori Suzuki, Alberto Isidori, and Tzhy-Jong Tarn

Summary: Minimax estimation of statistically uncertain systems under the
choice of a feedback parameter B.I. Anan'ev

Summary: System assignment and pole placement for symmetric realisations
Robert Mahony and Uwe Helmke

Summary: Legendre-Tau approximations for LQR feedback control of
acoustic pressure fields H.T. Banks and F. Fakhroo

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA-Contents
Date: Wed, 5 Apr 1995

Linear Algebra and Its Applications Volume 219
Table of Contents

The General Nonstrict Algebraic Riccati Inequality
Carsten W. Scherer

Congruence of Hermitian Matrices Over Some Localizations of $C[z, z_1]$
Dragomir Z. Dokovic and Leonardo Legorreta

Fast Algorithms for Generalized Displacement Structures and Lossless
Systems Ali H. Sayed and Thomas Kailath

The Sine Theorem and Inequalities for Volumes of Simplices and
Determinants Darko Veljan

Permutation Invariant Norms
Chi-Kwong Li and Paras P. Mehta

On Classes of Normalized Matrices
Zuzana Nagyova

Extension of the Furuta Inequality and Ando-Hiai Log-Majorization
Takayuki Furuta

Norms of Schur Multipliers
Miguel Lacruz

Involuntary Expressions for Elements in $GL_n(\mathbb{Z})$ and $SL_n(\mathbb{Z})$
Hiroyuki Ishibashi

Morphismes de Peirce et Orthogonalite Dans les Algebres de Bernstein
C. Burgueno and C. Mallol

On Partial Orderings on the Set of Rectangular Matrices
Jan Hauke and Augustyn Markiewicz

Minimizing the Permanent over Some Faces of the Polytope of Doubly
Stochastic Matrices Suk-Geun Hwang

Matrices With Prescribed Submatrices and Number of Invariant Polynomials

Isabel Cabral

Exponential Numbers of Linear Operators in Normed Spaces

P. Enflo, V. I. Gurarii, V. Lomonosov, and Yu I. Lyubich

Orthogonal Matrix Polynomials and Higher-Order Recurrence Relations

A. J. Duran and W. Van Assche

Author Index

----- end -----

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Report of Workshop on Inverse Problems in Engineering
New Book: Conjugate Gradient Type Methods for Ill-Posed Problems
Position Announcement: Experience in Inverse Problems Needed
Table of Contents: SIAM Journal on Mathematical Analysis
Table of Contents: SIAM Journal on Control and Optimization

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu

From: IPNet
Subject: Report of Workshop on Inverse Problems in Engineering
Date: Tue, 16 May 95 09:29:59

The 2nd Joint Russian-American Workshop on Inverse Problems in Engineering, sponsored by the Moscow Aviation Institute, was held in St. Petersburg, Russia, on August 21, 26, and 27 of 1994. The final report of the Workshop has been made available to the IPNet by James V. Beck of Michigan State University, and may be accessed electronically via one of the following methods:

(1) Send a message to

ipnet-request@math.msu.edu

with the following in the BODY of the message:

send Report_on_Russian_American_Workshop

Or, (2) via anonymous ftp to math.msu.edu to retrieve the file

[/pub/ipnet_archive/Report_on_Russian_American_Workshop](ftp://math.msu.edu/pub/ipnet_archive/Report_on_Russian_American_Workshop)

Or, (3) via gopher (math.msu.edu)
(also, via the gopher selection from <http://www.mth.msu.edu>).

From: hanke@ipmsun1.mathematik.uni-karlsruhe.de (Martin Hanke)
Subject: New Book on Conjugate Gradients
Date: Mon, 15 May 1995 10:01:05

Announcement of a new book:

CONJUGATE GRADIENT TYPE METHODS FOR ILL-POSED PROBLEMS
Martin Hanke (Universitat Karlsruhe, Germany)

Publisher: Pitman Research Notes in Mathematics
Longman Scientific & Technical
Longman House

Harlow, Essex CM20 2JE
UK

Prize: UK pounds 23

About the book:

The conjugate gradient method is a powerful tool for the iterative solution of selfadjoint operator equations in Hilbert space. This volume summarizes and extends the developments of the past decade concerning the applicability of the conjugate gradient method (and some of its variants) to ill-posed problems and their regularization.

This Research Note presents a unifying analysis of an entire family of conjugate gradient type methods. Most of the results are as yet unpublished, or obscured in the Russian literature. Beginning with original results by Nemirovskii and others for minimal residual type methods, equally sharp convergence results are then derived for the classical Hestenes-Stiefel algorithm. In the final chapter some of these results are extended to selfadjoint indefinite operator equations.

The main tool for the analysis is the connection of conjugate gradient type methods to real orthogonal polynomials, and elementary properties of these polynomials. These prerequisites are provided in a first chapter. Applications to image reconstruction and inverse heat transfer problems are pointed out, and exemplarily numerical results are shown for these applications.

From: jen@chensun4a.tamu.edu (Jan-Erik Nordtvedt)
Subject: Position Announcement
Date: Sun, 14 May 95 10:43:35

Position Announcement

RF - Rogaland Research is one of the leading, multidisciplinary research institutes in Norway, with main office in Stavanger, and a branch in Bergen. RF -- Rogaland Research has more than 250 employees organized into three divisions: RF - Petroleum, RF - Society, and RF - Industry and Environment. RF - Rogaland Research is directed to current and future contributions to industry and society within advanced technological and social science research.

In our branch in Bergen, we now have a position open for a

Senior Research Scientist

with a PhD in physics, mathematics, statistics, or within engineering. The position is open from August 15, 1995. We prefer 2-5 years experience, but newly graduated PhD candidates will be considered. The candidate should have some experience in inverse (or system and parameter identification) problems.

The Senior Research Scientist will work within our international initiative to develop theory and methodologies for solving inverse problems in engineering contexts. This strategic initiative was established in cooperation with University of Bergen, Norway, and Texas A&M University, College Station, TX, USA. The effort has received significant funding from the Norwegian Research Council, and several, larger, industrial programs are currently underway. The current focus areas are directed to the petroleum industry, although other areas will be pursued in the future. The Senior Research Scientist will be expected

to foster activities directed to increasing the funding base.

Applications will be accepted up to June 15, 1995, or until the position is filled. Please send a full Curriculum Vitae and copies of all relevant publications to:

Dr. Jan-Erik Nordtvedt, Research Coordinator, Chem. Eng. Dept., Texas A&M University, College Station, TX 77843-3122, USA.

For further information, please contact Dr. Nordtvedt:
E-mail: jen@chensun4a.tamu.edu; Phone: +409 845 8177;
Fax: +409 847 8590.

From: young@siam.org
Subject: SIAM J. Math. Anal., Volume 26, Number 4, Contents
Date: Fri, 05 May 95 13:43:35

SIAM J. Math. Anal. Volume 24, Number 3
Table of Contents

Elliptic-Parabolic Equations with Hysteresis Boundary Conditions
Ulrich Hornung and R. E. Showalter

Regularity for the Interfaces of Evolutionary p -Laplacian Functions
Hi Jun Choe and Jongsik Kim

Energy Estimates Relating Different Linear Elastic Models of a Thin
Cylindrical Shell II: The Case of Free Boundary
Jyrki Piila and Juhani Pitkaranta

A Global Existence and Uniqueness Theorem for a Model Problem in Dynamic
Elasto-Plasticity with Isotropic Strain-Hardening
A. Nouri and M. Rascole

On Coupled Integral H -Like Equations of Chandrasekhar
Jonq Juang

Analyse spectrale d'une bande acoustique multistratifiée I: Principe
d'absorption limite pour une stratification simple
Elisabeth Croc et Yves Dermenjian

Pyramidal Algorithms for Littlewood--Paley Decompositions
M. A. Muschietti and B. Torresani

Semiclassical Asymptotics beyond All Orders for Simple Scattering
Systems Alain Joye and Charles-Edouard Pfister

Bifurcation of Spatial Central Configurations from Planar Ones
Richard Moeckel and Carles Simo

A Mathematical Model of Traffic Flow on a Network of Unidirectional
Roads Helge Holden and Nils Henrik Risebro

Characterization of L_p -Solutions for the Two-Scale Dilation Equations
Ka-Sing Lau and Jianrong Wang

Interval Oscillation Conditions for Difference Equations
Q. Kong and A. Zettl

Nontensor Product Wavelet Packets in $L_2(\mathbb{R}^s)$ Zuowei Shen

Asymptotic Regularity of Compactly Supported Wavelets
Hans Volkmer

From: thomas@siam.org
Subject: SICON 33-4 table of contents
Date: Fri, 12 May 95 16:21:42 EST

SIAM Journal on Control and Optimization July 1995 Volume 33, Number 4

Table of Contents

- Feedback Laws for Nonlinear Distributed Control Problems via
Trotter-Type Product Formulae Catalin Popa
- Regularity Conditions for the Stability Margin Problem with Linear
Dependent Perturbations Antonio Vicino and Alberto Tesi
- The H_∞ Problem for Infinite-Dimensional Semilinear Systems
Viorel Barbu
- Relaxed Minimax Control E. N. Barron and R. Jensen
- Sensitivity Analysis in Nonlinear Programs and Variational Inequalities
via Continuous Selections Jiming Liu
- A Result Concerning Controllability for the Navier-Stokes Equations
E. Fernandez-Cara and M. Gonzalez-Burgos
- Smoothly Global Stabilizability by Dynamic Feedback and Generalizations
of Artstein's Theorem John Tsiniias
- A Mixed l_∞/H_∞ Optimization Approach to Robust Controller
Design Mario Sznaier
- Orders of Input/Output Differential Equations and State-Space Dimensions
Yuan Wang and Eduardo D. Sontag
- Matrix Pairs in Two-Dimensional Systems: An Approach Based on Trace
Series and Hankel Matrices Ettore Fornasini and Maria Elena Valcher
- Lyapunov-like Techniques for Stochastic Stability Patrick Florchinger
- On Feedback Equivalence of a Parameterized Family of Nonlinear Systems
J.-B. Pomet and I. A. K. Kupka
- Necessary Conditions for Bilevel Dynamic Optimization Problems
Jane J. Ye
- Using Persistent Excitation with Fixed Energy to Stabilize Adaptive
Controllers and Obtain Hard Bounds for the Parameter Estimation Error
Miloje S. Radenkovic and B. Erik Ydstie
- Identification of $q(x)$ in $u_t = \Delta u - qu$ from Boundary Observations
Sergei Avdonin and Thomas I. Seidman
- Exact Observability of the Time-Varying Hyperbolic Equation with
Finitely Many Moving Internal Observations A. Yu. Khapalov

Rendezvous Search on the Line with Distinguishable Players
Steve Alpern and Shmuel Gal

Erratum: Observability and Observers for Nonlinear Systems
J.-P. Gauthier and I. A. K. Kupka
----- end -----

IPNet Digest Volume 2, Number 06 July 1, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

- Inverse Problems Home Page
- International Conference on Inverse and Ill-Posed Problems (IIPP-96)
- Conference on Computing in the next millennium (CHEP-RIO/95)
- Table of Contents: Inverse Problems
- Table of Contents: SIAM Journal on Optimization
- Table of Contents: SIAM Journal on Applied Mathematics
- Table of Contents: SIAM Journal on Numerical Analysis
- Table of Contents: SIAM Journal on Matrix Analysis Applications
- Table of Contents: Mathematics of Control, Signals, and Systems
- Table of Contents: Journal of Math. Systems, Estimation, Control
- Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: kwoodbur@me.ua.edu (Keith A Woodbury)
Subject: inverse problems home page
Date: Thu, 1 Jun 1995

For all you web browsers (and I know you're out there!), I've started an "Inverse Problems" Home Page. I have a Calendar of Events, which I'd like to keep current with announcements about any upcoming IP conferences/seminars. I also have an area to post electronic articles.

Please check it out: <http://www.me.ua.edu/inverse>

If you have anything to contribute (upcoming events or Electronic Articles) please let me know. Also, if you'd like to make a hot link from my page to one of yours (as appropriate) let me know that, too.

keith woodbury
woodbury@me.ua.edu

From: kryl@cs.msu.su (Krylov A.S.)
Subject: Confinfo
Date: Fri, 2 Jun 1995

INTERNATIONAL CONFERENCE ON
INVERSE and ILL-POSED PROBLEMS (IIPP-96)
SEPTEMBER 9-14, 1996
MOSCOW, RUSSIA

Organized by: Moscow Lomonosov State University

FIRST ANNOUNCEMENT

Framework: The International Conference on Inverse and Ill-Posed Problems is planned to be held in Moscow Lomonosov State University, Moscow, Russia from September 9 to September 14, 1996. The Conference is dedicated to the memory of A.N.Tikhonov on the occasion of his 90th birthday.

Conference Chairman:

V.A.Sadovnichii, Rector of Moscow Lomonosov State University

International Program Committee:

A.Bensoussan, A.M.Denisov, V.I.Dmitriev, H.W.Engl,
A.V.Goncharskii, M.M.Lavrentiev, A.Lorenzi, M.S.Nashed,
Yu.S.Osipov, V.G.Romanov, P.C.Sabatier, V.A.Sadovnichii,
A.A.Samarskii, V.N.Strahov and M.Yamamoto.

Scientific Secretaries:

A.S.Krylov and A.Yu.Shcheglov.

Conference Themes

- Inverse Problems for Differential Equations
- Inverse Problems in Natural Sciences, Engineering and Industry
- Mathematical Problems of Tomography
- Theory of Ill-Posed Problems
- Numerical Methods and Computational Algorithms for Ill-Posed Problems Solving.

Conference Language: The languages of the conference will be English and Russian.

Schedule

Detailed information including call for papers will be announced in October 1995. The scientific program and official registration Forms will be available in early 1996.

International Conference on Inverse and Ill-Posed Problems
IIPP-96
September 9-14, 1996, Moscow, Russia

PRELIMINARY REGISTRATION

Name:

(First)

(Middle)

(Last)

Affiliation:

Mailing Address:

Country:

E-mail:

Fax:

Tel:

() I want further information

() I intend to participate in the Conference

() I intend to present a paper

Tentative title (if available):

Please return to:

Dr. A.S.Krylov
E-mail(internet): kryl@cs.msu.su
Faculty of Computational Mathematics and Cybernetics,
Moscow Lomonosov State University,
Vorobievsky Gory, 119899, Moscow, Russia.

From: demoura@zeus.funceme.br (Carlos A. de Moura)
Subject: CHEP-RIO/95: Computing in the next millenium
Date: Fri, 26 May 95

C O M P U T I N G I N H I G H E N E R G Y P H Y S I C S
C H E P - 9 5

Rio de Janeiro, September 18 - 22 1995
Bulletin # 2

Computing for the Next Millenium.....

This is a special bulletin, which will be followed very shortly by further details on the program. The main purpose of this bulletin is to announce A CHANGE OF DATE FOR THE SUBMISSION OF ABSTRACTS and to CLARIFY THE THEME and FOCUS OF THE PROGRAM.

The conference will take place from Monday September 18th to Friday September 22nd. It will be preceded by a "Workshop and Tutorial Day" on Sunday September 17th. It will be followed by a 2 or 3 day HEPIX meeting starting on Monday September 25th. There will be a limited number of talks in plenary sessions, with a strong focus on hearing from people outside of the field of High Energy Physics, and a large number of parallel sessions. The second day of the conference will include special vendor exhibits and one or more of the parallel sessions devoted to vendor technical presentations.

We have had many requests to a) explicitly broaden the program and b) encourage early submission of abstracts so that people can know whether their paper has been accepted three months before the conference date

a) THE PROGRAM

It was always the intention of the conference to include all relevant aspects of Computing in High Energy Physics - from data acquisition and triggering, to analysis, simulation, data storage, languages, tools and algorithms, just as has been done at previous CHEP conferences. Some conferences have been more heavily focused towards hardware and data acquisition and some more towards software. To make it quite clear that all areas are to be addressed at this conference we have changed the emphasis and theme of the program to "Computing for the next Millenium". Clearly we are at a time in the development of High Energy Physics, when some major changes in the way we think through our data acquisition and computing problems and apply technology to solve them, will be called for in the high energy physics programs of the year 2000 and beyond. We would like papers submitted to this conference to relate to this issue of "reinventing the model of computing" as we move forward. Many people wish to speak about significant work done and progress made in the past year, and that is appropriate. We ask that they help make this conference one which looks to the future, rather than the past, by considering how the work they present relates to Computing for the Next Millenium. We hope, thus, to maintain our focus on where we are going, whilst entertaining both radical suggestions and approaches to Computing problems, as well as step-wise incremental

progress which may provide the basis for our future Computing.

b) ABSTRACTS - SUBMIT BY 24-MAY-1995 to CHEP95@FNAL.GOV

The deadline for abstracts has been moved up to Wednesday May 24th 1995. Papers will be accepted, or rejected, by Thursday June 15th, 1995 and authors informed via EMAIL by that date. Papers submitted after the deadline date may be considered for inclusion in the program, but there is no guarantee that we will be able to accommodate such papers, due to limitations on the length of sessions. All papers accepted for the conference, including posters, are candidates for publication in the proceedings of the conference. Accepted papers MUST BE SUBMITTED AT THE START OF THE CONFERENCE without exception. Detailed instructions for authors will be mailed to presenters and will also be available on the CHEP web pages at LAFEX and FNAL.

Abstracts can be submitted via the CHEP95 home page at
<http://www-chep95.fnal.gov> at Fermilab

Alternatively abstracts can simply be mailed to CHEP95@FNAL.GOV

The abstract should have the following format:

Submitter's Name:
Submitter's Institution:
Address of Institution:
Submitter's EMAIL address:
Submitter's Telephone number and/or FAX number:
Authors of the Paper each with Institution (and Experiment Affiliation, if any):
Topic area:
Abstract - 500 word or less summary which highlights the scope and significance of the paper and it's relevance to the theme of the conference - Computing for the next Millenium.

You may also choose to submit the abstract by sending the URL of a document containing the above information. We will post the list of titles and authors of submissions on the Web and will make the actual abstracts of all accepted papers available on the Web following the selection of papers and their assignment to an appropriate parallel session.

Topic areas:

The program is currently envisaged as breaking down into 5 main topic areas, each of which will have multiple parallel sessions. One or more of the sessions from each topic area will run in parallel with sessions from other topic areas. Currently our tentative breakdown into topic areas is as follows:

- A Analysis
- B Data Access and Storage
- C DAQ and Triggering
- D Worldwide Collaboration
- E Tools, Languages, and Software development environments
- F Other?

We will be working with our International Advisory Committee on details of the program and more details on topic areas and sub-topics will be available on the web shortly. Authors are requested to attempt to classify their paper in the most appropriate topic/sub-topic area when submitting.

We will continue to send out Bulletins via EMAIL, but all information on the program, abstracts and instructions to authors will be kept up to date on the Web page at Fermilab - <http://www-chep95@fnal.gov/>

Int. Advisory Committee (initial) (current and previous 2 CHEP organizers)

Joel Butler (FERMILAB)
Stu Loken (LBL)
Thomas Nash (FERMILAB)
Tony Osborne (CERN)
Alberto Santoro (LAFEX) (co-chair)
Ronald Shellard (LAFEX)
Vicky White (FERMILAB) (co-chair)
David Williams (CERN)

CHEP95
LAFEX/CBPF
Rua Dr. Xavier Sigaud, 150 - 5 Andar
22290-180 - Rio de Janeiro - RJ
Brazil

Fax: 55 21 541-2047
Phone: 55 21 542-3837
E-mail: CHEP95@LAFEX.CBPF.BR

Vicky White - Co-Chair
EMAIL: WHITE@fnal.gov

Alberto Santoro - Co-Chair
EMAIL: SANTORO@LAFEX.CBPF.BR

Rosemonde Bettencourt - Secretary
E-mail: ROSE@LAFEX.CBPF.BR

[This announcement has been shortened.
For more information, please contact the organizers. -Ed.]

From: prod2@ioppl.co.uk (Tel 0272 297481)
Subject: Inverse Problems Contents
Date: 25 Apr 1995

Inverse Problems Volume 10 No 6 December 1994
TABLE OF CONTENTS

Letters to the Editor

Inverse problem in the P representation of negative binomial states
C Gray, R Srinivasan and C T Lee

Three-dimensional inhomogeneous media imaging
S Gutman and M Klivanov

Papers

Analysis of bounded variation penalty methods for ill-posed problems
R Acar and C R Vogel

A class of C-integrable PDEs in multidimensions F Calogero

The detection and monitoring of leukemia using electromagnetic waves:
mathematical theory D Colton and P Monk

Uniqueness and stable determination of forcing terms in linear partial
differential equations with overspecified boundary data

H W Engl, O Scherzer and M Yamamoto

Factors influencing the ill-posedness of nonlinear problems
B Hofmann and O Scherzer

Parameter identification for a model of chromatographic column
F James and M Sepulveda

A novel hierarchy of integrable lattices
I Merola, O Ragnisco and T Gui-Zhang

Determination of a source term in the linear diffusion equation
D E Reeve and Spivack

Analysis of the discrete Beck method solving ill-posed parabolic
equations H-J Reinhardt

The plane-wave detection problem W W Symes

An inverse problem for a nonlinear ordinary differential equation with
incomplete initial conditions L Tang, N Qian and C Dong

On the asymptotical regularization of nonlinear ill-posed problems
U Tautenhahn

The associated evolution equations of the Schrodinger operator in the
plane T-Y Tsai

Inverse Problems Newsletter

Author index (with titles), volume 10

Inverse Problems Volume 11 No 1 February 1995

Topical Review

The phase retrieval problem
M V Klibanov, P E Sacks and A V Tikhonravov

Papers

Propagation of transient electromagnetic waves in time-varying
media---direct and inverse scattering problems
I Aberg, G Kristensson and D J N Wall

Family boundary curves for holonomic systems with two degrees of freedom
G Bozis and F Borghero

On the regularization of the ill-posed logarithmic kernel integral
equation of the first kind G Bruckner

Joint spectral and polarimetric analysis of hot star wind transients
P Salvini, M Bertero and J C Brown

The Borg theorem for the vectorial Hill's equation B Depres

The $\overline{\partial}$ approach to inverse scattering for Dirac
operators G Hachem

Design of reflectionless media for transient electromagnetic waves
R Hellberg and A Karlsson

The linearization of the Dirichlet to Neumann map in anisotropic plate theory
M Ikehata

Phase retrieval of radiated fields
T Isernia, G Leone and R Pierri

On the constrained modified KP hierarchy
Q P Liu

Unique recovery of a coefficient in an elliptic equation from input sources
B D Lowe and W Rundell

An application of the Pade approximation to the inverse problem of monochromatic vibrosounding
N N Novikova

Biorthogonal series expansions of x-ray and k-plane transform
M Rosier

Numerical study of the phaseless inverse scattering problem in thin-film optics
A V Tikhonravov, M V Klibanov and I V Zuev

Inverse Problems Newsletter

Inverse Problems Volume 11 No 2 April 1995

Topical Review

Image reconstruction from truncated, two-dimensional, parallel projections
M Defrise, R Clack and D W Townsend

Papers

On the use of Gaussian beams in one-dimensional profile inversion connected with lossy dielectric slabs
T Akduman and M Idemen

The detection and monitoring of leukemia using electromagnetic waves: numerical analysis
D Colton and P Monk

On finding a surface crack from boundary measurements
A R Elcrat, V Isakov and O Neculoiu

Identification of the permeability distribution in soil by hydraulic tomography
J Gottlieb and P Dietrich

Remote reconstruction of confined wavefront propagation
F Greensite

Frechet derivatives in inverse obstacle scattering
F Hettlich

Estimating the energy source and reflectivity by seismic inversion
S E Minkoff and W W Symes

Are our parameter estimators biased? The significance of finite-difference regularization operators
J Ory and R G Pratt

POMPUS: an optimized EIT reconstruction algorithm

K Paulson, W Lionheart and M Pidcock

A Cauchy-type problem for the wave equation H Ren and V H Weston

The 2D Toda lattice and the Ablowitz--Ladik hierarchy
V E Vekslerchik

Stability, reconstruction formula and regularization for an inverse
source hyperbolic problem by a control method M Yamamoto

Inverse Problems Newsletter

Inverse Problems Volume 11 No 3 June 1995

Letters to the Editor

One-dimensional Marchenko inversion in the presence of bound states
M Braun, S A Sofianos and R Lipperheide

A total variation enhanced modified gradient algorithm for profile
reconstruction P M van den Berg and R E Kleinman

Papers

A dual regularization approach to seismic velocity inversion
M S Gockenbach, W W Symes and R A Tapia

On isospectral rods, horns and strings G M L Gladwell and A Morassi

An inverse model problem in kinetic theory H Babovsky

On local tomography P Kuchment, K Lancaster and L Mogilevskaya

On isospectral spring--mass systems G M L Gladwell

On a wave field transformation described by the two-dimensional
Kadomtsev--Petviashvili equation K A Gorshkov and D E Pelinovsky

Minimal a priori assignment in a direct method for determining
phenomenological coefficients uniquely
G Parravicini, M Giudici, G Morossi and G Ponzini

Inverse Problems Newsletter

Inverse Problems 1995 Board and Subscription Details

Honorary Editor

F Natterer, Universitat Munster

Editorial Board

J C Brown, University of Glasgow

C De Mol, Universite Libre de Bruxelles

D Donoho, Stanford University, CA

H Engl, Johannes Kepler Universitat Linz

V Isakov, Wichita State University, KS

R Kress, Universitat Gottingen

G Kristensson, Lund Institute of Technology

J Leon, U.M.II, Montpellier

A Louis, Universitat des Saarlandes, Saarbrucken
J R McLaughlin, Rensselaer Polytechnic Institute
C Pichot, W Rundell, Texas A&M University, College Station, TX
P M Santini, Universita di Roma La Sapienza
J A Scales, Colorado School of Mines, Golden, CO
R K Snieder, Department of Theoretical Geophysics, Utrecht
M Vogelius, Rutgers University, New Brunswick, NJ

International Advisory Panel

M Bertero, Universita di Genova
J Ch Bolomey, Ecole Superieure d'Electricite, Gif-sur-Yvette
F Calogero, Universita di Roma
K Chadan, Universite de Paris XI
I J D Craig, University of Waikato
L D Faddeev, Leningrad Branch of Mathematical Institute (LOMI),
St Petersburg
F A Grunbaum, University of California Berkeley, CA
M Z Nashed, University of Delaware, Newark, DE
E R Pike, King's College, London
F Rocca, Politecnico di Milano
P C Sabatier, Universite des Sciences et Techniques du
Languedoc, Montpellier

Subscription Information For all countries, except the United States,
Canada and Mexico, the subscription rate is 440.00 per annum. Single
issue price is 73.50 (except conference issues/supplements---prices on
application). Delivery is by air-speeded mail from the United Kingdom to
subscribers in most overseas countries, and by airfreight and registered
mail to subscribers in India. Orders to: Institute of Physics
Publishing, Order Processing Department, Techno House, Redcliffe Way,
Bristol BS1 6NX, UK. For the United States, Canada and Mexico the
subscription rate is US \$880.00 per annum. Delivery is by transatlantic
airfreight and onward mailing. Orders to: American Institute of Physics,
Subscriber Services, 500 Sunnyside Blvd, Woodbury, NY 11797-2999, USA.

All other details as 1994 volume.

From: nelson@siam.org
Subject: SIAM J.OPTIMIZATION, VOL.5,NO.3, AUG 1995, TABLE OF CONTENTS
Date: Thu, 22 Jun 95

TABLE OF CONTENTS

Nonpolyhedral Relaxations of Graph Bisection Problems
Svatopluk Poljak and Franz Rendl

Faster Simulated Annealing Bennett Fox

Incorporating Condition Measures into the Complexity Theory of Linear
Programming James Renegar

Global Convergence of a Long-Step Affine-Scaling Algorithm for
Degenerate Linear Programming Problems
Takashi Tsuchiya and Masakazu Muramatsu

On Eigenvalue Optimization Alexander Shapiro and Michael K. H. Fan

Data Parallel Quadratic Programming on Box-Constrained Problems

Mike P. McKenna, Jill P. Mesirov, and Stavros A. Zenios

A Sequential Quadratic Programming Algorithm Using an Incomplete
Solution of the Subproblem
Walter Murray and Francisco J. Prieto

Local Convergence of SQP Methods in Semi-Infinite Programming
G. Gramlich, R. Hettich, and E. W. Sachs

Taylor's Formula for $Ck,1$ Functions Dinh The Luc

The Linear Nonconvex Generalized Gradient and Lagrange Multipliers
Jay S. Treiman

On the Simulation and Control of Some Friction Constrained Motions
Roland Glowinski and Anthony J. Kearsley

From: thomas@siam.org

Subject: SIAP 55-4

Date: Wed, 07 Jun 95

SIAM Journal on Applied Mathematics AUGUST 1995 Volume 55, Number 4
TABLE OF CONTENTS

A Study of Singularity Formation in the Kelvin-Helmholtz Instability
with Surface Tension Michael Siegel

Computations of Steep Gravity Waves by a Refinement of Davies-Tulin's
Approximation Jean-Marc Vanden-Broeck and Touvia Miloh

Fluid-Solid Interaction: Acoustic Scattering by a Smooth Elastic Obstacle
C. J. Luke and P. A. Martin

Nonlinear Oscillations in a Resonant Gas Column: An
Initial-Boundary-Value Study Meng Wang and David R. Kassoy

Low or High Peclet Number Flow Past a Prolate Spheroid in a Saturated
Porous Medium Louis A. Romero

Forced Convection Past a Slender Body in a Saturated Porous Medium
Louis A. Romero

Models of Vortices in Anisotropic Superconductors Richard A. Klemm

The Accurate Dynamic Modelling of Contaminant Dispersion in Channels
Simon D. Watt and Anthony J. Roberts

Constant Front Speed in Weakly Diffusive Non-Fickian Systems
David A. Edwards

An Exact Solution of Stikker's Nonlinear Heat Equation
Allan R. Willms

The Effect of a Refractory Period on the Power Spectrum of Neuronal
Discharge
Joel Franklin and Wyeth Bair

Relationships Between a Potential and Its Scattering Frequencies
George Majda and Musheng Wei

Dynamic Bifurcation in Hamiltonian Systems with One Degree of Freedom
Norman R. Lebovitz and Adriana I. Pesci

Recognizing Convergent Orbits of Discrete Dynamical Systems
Stanley Ocken

From: tschoban@siam.org
Subject: SINUM 32-4 Table of Contents
Date: Tue, 27 Jun 95

SIAM Journal on Numerical Analysis AUGUST 1995, Volume 32, Number 4
TABLE OF CONTENTS

A Fast Solver for Navier-Stokes Equations in the Laminar Regime Using
Mortar Finite Element and Boundary Element Methods
Y. Achdou and O. Pironneau

Projection Method I: Convergence and Numerical Boundary Layers
Weinan E and Jian-Guo Liu

Numerics and Hydrodynamic Stability: Toward Error Control in
Computational Fluid Dynamics Claes Johnson, Rolf Rannacher, Mats Boman

Convergence of Particle Methods with Random Rezoning for the
Two-Dimensional Euler and Navier-Stokes Equations
Y. Brenier and G.-H. Cottet

Particle Approximation of a Linear Convection-Diffusion Problem with
Neumann Boundary Conditions S. Mas-Gallic

Multigrid Smoothing Factors for Red-Black Gauss-Seidel Relaxation
Applied to a Class of Elliptic Operators Irad Yavneh

Numerical Solutions of One-Pressure Models in Multifluid Flows
Fabienne Berger and Jean-Francois Colombeau

Finite Element Approximation of Time Harmonic Waves in Periodic
Structures
Gang Bao

Error Estimates on a New Nonlinear Galerkin Method Based on Two-Grid
Finite Elements Martine Marion and Jinchao Xu

Convergence of a Second-Order Scheme for the Nonlinear Dynamical
Equations of Elastic Rods Richard S. Falk and Jian-Ming Xu

Optimal Selection of the Bubble Function in the Stabilization of the
P1-P1 Element for the Stokes Problem Roger Pierre

Thermal Simulation of Pipeline Flow Philip T. Keenan

Spectral Approximation of a Boundary Condition for an Eigenvalue Problem
Anne-Sophie Bonnet-Bendhia and Nabil Gmati

Finite Element Vibration Analysis of Fluid-Solid Systems Without
Spurious Modes
A. Bermudez, R. Duran, M. A. Muschietti, R. Rodriguez, and J. Solomin

Runge-Kutta Solutions of Stiff Differential Equations Near Stationary Points
Ch. Lubich, K. Nipp, and D. Stoffer

A Product-Decomposition Bound for Bezout Numbers
Alexander P. Morgan, Andrew J. Sommese, and Charles W. Wampler

From: nelson@siam.org
Subject: SIAM J.MATRIX ANAL.APPL.,VOL.16,NO.4,10/95 TABLE OF CONTENTS
Date: Thu, 22 Jun 95

SIAM J. Matrix Analysis Applications Vol. 16, No. 4, October 1995
TABLE OF CONTENTS

On a Sturm Sequence of Polynomials for Unitary Hessenberg Matrices
Angelika Bunse-Gerstner and Chunyang He

Least Squares Sign Solvability Bryan L. Shader

On Eigenvalue Estimates for Block Incomplete Factorization Methods
O. Axelsson and H. Lu

Diagonal Dominance in the Parallel Partition Method for Tridiagonal Systems
Chris Walshaw

Matrices with Sign Consistency of a Given Order J. M. Pena

On a QR-like Algorithm for Some Structured Eigenvalue Problems
A. George, Kh. D. Ikramov, E. V. Matushkina, and W.-P. Tang

The Group Inverse Associated with an Irreducible Periodic Nonnegative Matrix
Steve Kirkland

Variable Block CG Algorithms for Solving Large Sparse Symmetric Positive Definite Linear Systems on Parallel Computers, I: General Iterative Scheme
A. A. Nikishin and A. Yu Yeregin

A Restarted GMRES Method Augmented with Eigenvectors Ronald B. Morgan

Comments on Large Least Squares Problems Involving Kronecker Products
Hongyuan Zha

Trace and Eigenvalue Inequalities for Ordinary and Hadamard Products of Positive Semidefinite Hermitian Matrices Bo-Ying Wang and Fuzhen Zhang

A Basis-Kernal Representation of Orthogonal Matrices
Xiaobai Sun and Christian Bischof

On the Convergence of the Jacobi Method for Arbitrary Orderings
Walter F. Mascarenhas

Multisplitting Preconditioners Based on Incomplete Choleski Factorizations
R. Bru, C. Corral, A. Martinez, J. Mas

On the Symmetric and Unsymmetric Solution Set of Interval Systems
Gotz Alefeld and Gunter Mayer

A Domain Decomposition Method for First-Order PDEs Lina Hemmingsson

Some Properties of Fully Semimonotone Q0-Matrices
G. S. R. Murthy and T. Parthasarathy

Stability of Linear Equations Solvers in Interior-Point Methods
Stephen J. Wright

The Algebraic Riccati Equation and Inequality for Systems with
Uncontrollable Modes on the Imaginary Axis Carsten W. Scherer

Perturbation Bounds for the Generalized Shur Decomposition
Ji-guang Sun

Application of Vector-Valued Rational Approximations to the Matrix
Eigenvalue Problem and Connections with Krylov Subspace Methods
Avram Sidi

From: "Lieke v.d. Eersten-Schultze" <Lieke.Schultze@cwi.nl>
Subject: Volume 7.4 MCSS
Date: Tue, 13 Jun 1995

Contributed by Jan H. van Schuppen (J.H.van.Schuppen@cwi.nl)

Mathematics of Control, Signals, and Systems (MCSS) Volume 7, Issue 4
TABLE OF CONTENTS

The Computational Complexity of Approximating the Minimal Perturbation
Scaling To Achieve Instability in an Interval Matrix
G.E. Coxson and C.L. DeMarco

Decentralized Sequential Detection with Sensors Performing Sequential
Tests
V.V. Veeravalli, T. Basar, and H.V. Poor

Embedding of Time-Varying Contractive Systems in Lossless Realizations
A.-J. van der Veen and P. Dewilde

On the Stability of Slowly Time-Varying Linear Systems V. Solo

State Feedback and Estimation of Well-Posed Systems K.A. Morris,

REMINDER
The new address for submissions is:

J.H. van Schuppen
Co-Editor MCSS
CWI
P.O. Box 94079
1090 GB Amsterdam
The Netherlands

E-mail inquires regarding submission should be addressed
to: mcss@cwi.nl.

From: hyman@ben.birkhauser.com (Elizabeth Hyman)

Date: Tue, 20 Jun 1995

Contributed by: Edwin F. Beschler <beschler@spint.compuserve.com>

Journal of Mathematical Systems, Estimation, and Control Volume 5,
Number 3

TABLE OF CONTENTS

Stability of Discrete Time Jump Linear Systems
Yuguang Fang, Kenneth A. Loparo, and Xiangbo Feng

Unique Identification of Coefficient Matrices, Time Delays and Initial
Functions of Functional Differential Equations
Shin-ichi Nakagiri and Masahiro Yamamoto

Necessary Condition and Genericity of Dynamic Feedback Linearization
P. Rouchon

Summary: A Measure Change Derivation of Continuous State Baum-Welch
Estimators Lakhdar Aggoun, Robert J. Elliott, and John B. Moore

Summary: Splitting Subspaces and Acausal Spectral Factors
G. Michaletzky and Augusto Ferrante

Summary: A Hamiltonian Formalism for Optimization Problems
Leonid Faybusovich

Summary: Control System Radii and Approximation: A Case Study for the
1-D Heat Equation J.A. Burns and Gunther Peichl

Summary: Lowering the Orders of Derivatives of Controls in Generalized
State Space Systems E. Delaleau and W. Respondek

Summary: Time Minimal Synthesis for Planar Systems in the Neighborhood
of a Terminal Manifold of Codimension One B. Bonnard and M. Pelletier

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA, Contents volumes 221 and 222
Date: Wed, 17 May 1995

LINEAR ALGEBRA AND ITS APPLICATIONS Volume 221
TABLE OF CONTENTS

Trace Norm Bounds for Stable Lyapunov Operators
Charles Kenney and Gary Hewer

On Relations Between Jacobians and Minimal Polynomials Jie-Tai Yu

Characterization of Strong Observability and Construction of an Observer
Werner Kratz

A Rounding Technique for the Polymatroid Membership Problem
H. Narayanan

Differentiable Transformations Preserving a Cone Preordering
M. Niezgodna and Z. Otachel

Fast Rectangular Matrix Multiplication and QR Decomposition

Philip A. Knight

Functions That Preserve Families of Positive Semidefinite Matrices
Carl H. FitzGerald, Charles A. Micchelli, and Allan Pinkus

Eigenvalues of Oriented-Graph Matrices
Li Jiong-Sheng

Eigenvectors of Circulant Matrices of Prime Dimension
Andrew J. Lazarus

Sufficient Conditions for the Solvability of an Algebraic Inverse
Eigenvalue Program Li Luoluo

On the Largest k th Eigenvalues of Trees Shao Jia-yu

On Convergence of Nested Stationary Iterative Methods Zhi-Hao Cao

Rank Comparisons
LeRoy B. Beasley, Stephen J. Kirkland, and Bryan L. Shader

M-Matrices Whose Inverses Are Totally Positive J. M. Pena

A Convexity Result for Complex Numbers With Applications to Nonnegative
Normal Matrices Steve Kirkland and Robert E. Hartwig

Automorphisms and Derivations of Upper Triangular Matrix Rings
S. Jondrup

Stability of Invariant Subspaces of Regular Matrix Pencils
Juan M. Gracia and Francisco E. Velasco

On a Minimax Equality for Seminorms R. D. Grigorieff and R. Plato

Knot Positions for the Smoothest Periodic Quadratic Spline Interpolation
of Equispaced Data Kazuo Toraichi and Masaru Kamada

Inversion of Mosaic Hankel Matrices via Matrix Polynomial Systems
George Labahn, Bernhard Beckermann, and Stan Cabay

Contents Volume 222

Inequalities for Monotonic Arrangements of Eigenvalues
Bryan E. Cain, Roger A. Horn, and Li Luoluo

Least-Squares Solution of Equations of Motion Under Inconsistent
Constraints Joel Franklin

A Note on 0-1 Schur Multipliers Leo Livshitz

Two-Way Bidiagonalization Scheme for DOWDATING the Singular-Value
Decomposition Haesun Park and Sabine Van Huffel

On the Exponents of Primitive, Ministrong Digraphs With Shortest
Elementary Circuit Length
Xiao-jun Wu, Jia-yu Shao, Zhi-ming Jiang, and Xi-zhao Zhou

Green's Relations in the Matrix Semigroup $M_n(S)$
Yang Shangjun and Zhang Ronghua

Extremal Eigenproblem for Bivalent Matrices
R. A. Cuninghame-Green and P. Butkovic

A Conjecture on Permanents Seok-Zun Song

Explicit and Asymptotic Formulas for LDMT Factorization of Banded
Toeplitz Matrices James Lee Hafner

Properties of a Quadratic Matrix Equation and the Solution of the
Continuous-Time Algebraic Riccati Equation
Hong-guo Xu and Lin-zhang Lu

Two Results on the Spectral Radius of a Complex Matrix, With Application
to Instability Mau-hsiang Shih and Jinn-wen Wu

Unitary Equivalence in an Indefinite Scalar Product: An Analogue of
Singular-Value Decomposition Yuri Bolshakov and Boris Reichstein

Possible Inertia Combinations in the Stein and Lyapunov Equations
Luz M. DeAlba and Charles R. Johnson

Pollen Product Factorization and Construction of Higher Multiplicity
Wavelets Jaroslav Kautsky and Radka Turcajova

An Identity for Bipartite Matching and Symmetric Determinant Kazuo
Murota

----- end -----

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Call for Papers: Mathematics of Control, Signals, and Systems
New Home Page: Baltzer Science Publishers
Table of Contents: Siam J. on Control and Optimization
Table of Contents: Siam J. on Mathematical Analysis
Table of Contents: Computational and Applied Mathematics
Table of Contents: Advances in Computational Mathematics
Table of Contents: Surveys on Mathematics for Industry
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: "Lieke v.d. Eersten-Schultze" <Lieke.Schultze@cwil.nl>
Subject: Call for papers
Date: Tue, 04 Jul 1995

Contributed by Jan H. van Schuppen (J.H.van.Schuppen@cwil.nl)

Mathematics of Control, Signals, and Systems (MCSS)

CALL

Readers of this eletter are encouraged to submit their work to MCSS. The backlog that existed years ago has been completely cleared. For instance, several papers that were received in the second half of 1994 are already appearing in the 1995 volume. MCSS publishes one volume (four issues) per year, with about 400 pages.

AIMS AND SCOPE

MCSS publishes original and high-quality research papers concerned with mathematically rigorous, system theoretic aspects of control and signal processing.

HANDLING OF PAPERS

A paper is assigned to an Associate Editor, who makes a publication recommendation on the basis of a detailed and careful evaluation by two or more referees.

Evaluation criteria used include originality, substance, and quality of exposition. To maintain the highest possible standards of quality, and to pursue the goal of timely publication, only a small fraction of submitted papers can be expected to be accepted. The journal strives for a fast turnaround in the review process.

SUBMISSION

A typical paper submitted to MCSS consists of an average of 20 pages of LaTeX in 12 point article style with a maximum of 25 such pages, 50 double-spaced typewritten pages, or the equivalent. If a paper is longer than the maximum number of pages then authors are requested to provide a justification for the added length in

their cover letter.

Associate Editors and reviewers are instructed to pay careful attention to conciseness as an important characteristic of good mathematical exposition.

The address for submissions is:

J.H. van Schuppen
Co-Editor MCSS
CWI
P.O. Box 94079
1090 GB Amsterdam
The Netherlands

Authors wishing to inquire about the scope of the journal or the suitability of a particular topic are encouraged to contact the Editors informally, preferably by electronic mail, prior to submission. Email inquires regarding submission should be addressed to mcss@cw.nl.

WWW PAGES OF MCSS

<http://www.cwi.nl/cwi/departments/BS3/mcss.html>
<http://www.math.rutgers.edu/~sontag/mcss.html>

These pages are identical; the access is faster to one of these depending on the geographical area from which the request originates.

The MCSS Home Page provides general information on the journal, as well as information regarding the submission of manuscripts. Two additional pages can be accessed from the main page:

- - a page which provides information on the tables of contents of recently appeared issues of MCSS and on papers accepted for publication but not yet published;
- - and a page which provides information on the tables of contents of the older volumes of MCSS.

We look forward to your contributions!
Brad Dickinson, Jan van Schuppen, and Eduardo Sontag

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: NEW HOME PAGE
Date: Mon, 17 Jul 1995

Baltzer Science Publishers are pleased to announce the creation of our new
Homepage site on the World Wide Web at: <http://www.nl.net/~baltzer/>

The homepage provides full details of all our journals together with ordering information, author instructions and a copy of the Baltzer Style File for use by authors. There are also links to other useful sites.

From: thomas@siam.org
Subject: SICON 33-5 table of contents
Date: Thu, 13 Jul 95

CONTENTS

- Toward a Geometric Theory in the Time-Minimal Control of Chemical Batch Reactors B. Bonnard and J. de Morant
- Neumann Boundary Value Problems for Second-Order Ordinary Differential Equations Across Resonance Wang Huaizhong and Li Yong
- Equivalent Conditions for the Solvability of the Nonstandard LQ-Problem for Pritchard-Salamon Systems Bert Van Keulen
- Exact Controllability and Stabilization of a Vibrating String with an Interior Point Mass Scott Hansen and Enrique Zuazua
- Optimal Stopping of a Discrete Markov Process by Two Decision Makers
Krzysztof Szajowski
- On Nonlinear Optimal Control Problems with State Constraints
Monica Motta
- The Linear-Quadratic Control Problem Revisited Tomasz Bielecki
- Tools for Semiglobal Stabilization by Partial State and Output Feedback
Andrew Teel and Laurent Praly
- Consistency of Primal-Dual Approximations for Convex Optimal Control Problems Stephen E. Wright
- Error Bounds for Piecewise Convex Quadratic Programs and Applications
Wu Li
- A Perspective Theory of Motion and Shape Estimation in Machine Vision
B. K. Ghosh and E. P. Loucks
- Uniqueness for Viscosity Solutions of Nonstationary Hamilton-Jacobi-Bellman Equations Under Some A Priori Conditions (with Applications) William M. McEneaney
- Control Time for Gravity-Capillary Waves on Water
Russell M. Reid
- An Embedding of Domains Approach in Free Boundary Problems and Optimal Design P. Neittaanmaki and D. Tiba
- Second-Order Optimality Conditions in Sets of L^∞ Functions with Range in a Polyhedron Joseph C. Dunn

From: spiegelman@siam.org
Subject: SIMA 26-5 table of contents
Date: Tue, 25 Jul 95

SIAM Journal on Mathematical Analysis (SIMA) November 1995
ARTICLES

A Stefan Problem for a Reaction-Diffusion System
Avner Friedman, David S. Ross, and Jianhua Zhang

On Interface Conditions for a Thin Film Flow Past a Porous Medium
Guy Bayada and Michele Chambat

Existence of Shock Profiles for Viscoelastic Materials with Memory
Shuichi Kawashima and Harumi Hattori

Stationary Solutions of Boundary Value Problems for Maxwell--Boltzmann
System
Modelling Degenerate Semiconductors A. Nouri and F. Poupaud

The Equilibrium Plasma Subject to Skin Effect Yong Liu

Lower Semicontinuity Conditions for Functionals on Jumps and Creases
Andrea Braides

Global Asymptotic Dynamics of Gradient-Like Bistable Equations
Konstantin Mischaikow

The Existence of Periodic Solutions to Reaction-Diffusion Systems with
Periodic Data J. J. Morgan and S. L. Hollis

Boundedness of Solutions for Quasiperiodic Potentials
M. Levi and E. Zehnder

Periodic Solutions of a System of Coupled Oscillators Near Resonance
Carmen Chicone

On the Bifurcation Structure of Nonlinear Perturbations of Hill's
Equations at Boundary Points of the Continuous Spectrum
Tassilo Kupper and Thomas Mrziglod

Stability Criteria for Second-Order Dynamical Systems Involving Several
Time Delays F. G. Boese

The Inversion of the Laplace Transform of C_0 Semigroups and Its
Applications Peng-Fei Yao

Higher Singularities and Forced Secondary Bifurcation Bernhard Ruf

Construction et regularite des fonctions d'echelle Loic Herve

Some Results on the Convergence of Sampling Series Based on Convolution
Integrals Sonia M. Gomes and Elsa Cortina

From: Carlos Antonio de Moura <demoura@dee.ufc.br>
Subject: COMP and APPLIED MATH contents (V14,1,'95)
Date: Thu, 22 Jun 1995

COMPUTATIONAL AND APPLIED MATHEMATICS

Published by Birkhauser/Boston and SBMAC - Brazilian Soc. for Comp. and
Applied Mathematics

Vol.14:1, 1995 Special Issue on High Performance Scientific Computing
CONTENTS

Foreword C.A. de Moura

Madpack: A family of abstract multigrid or multilevel solutions
Craig C. Douglas

A multigrid solver for the steady state Navier-Stokes Equations using
the Pressure-Poisson formulation David Sidlikover and Uri M. Ascher

A posteriori error estimates for general numerical methods for scalar
conservation laws Bernardo Cockburn and Huiing Gau

SIMPAR: a parallel sparse simplex
M. Lentini, A. Reinoza, A. Teruel and A. Guill'en

An introduction to DIMSIMS J.C. Butcher

A parallelizable characteristic scheme for two phase flow I: Single
porosity models Jim Douglas, Jr., Felipe Pereira, and Li-Ming Yeh

Parallel computation of turbulent fluid flow Paul R. Woodward,
David H. Porter, B. Kevin Edgar, Steven Anderson, and Gene Bassett

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: ADVANCES IN COMPUTATIONAL MATHEMATICS - CONTENTS
Date: Fri, 23 Jun 1995

Advances in Computational Mathematics,
Editors-in-Chief: John C. Mason & Charles A. Micchelli

Advances in Computational Mathematics is an interdisciplinary journal of
high quality, driven by the computational revolution and emphasising
innovation, application and practicality. This journal is of interest
to a wide audience of mathematicians, scientists and engineers concerned
with the development of mathematical principles and practical issues in
computational mathematics.

Volume 3, No. IV, 1995
CONTENTS

Subdivision schemes in L_p spaces R.-Q. Jia

A new stepsize strategy for explicit Runge-Kutta codes G. Hall

A generalization of de Boor's stability result and symmetric
preconditioning K. Jetter and J. Stoeckler

The polynomial topological complexity of Fatou-Julia sets
C.T. Chong

A generalization of the variation diminishing property
J.M. Carnicer, T.N.T. Goodman and J.M. Pena

Multivariate convexity preserving interpolation by smooth functions
J.M. Carnicer

Control curves and knot insertion for trigonometric splines
P.E. Koch, T. Lyche, M. Neamtu and L.L. Schumaker

Volume 4, No. I-II, 1995. MULTISCALE TECHNIQUES Editor: Wolfgang
Dahmen

CONTENTS

- Numerical stability of biorthogonal wavelet transforms F. Keinert
- Numerical solution of the incompressible Navier--Stokes equations by Krylov subspace and multigrid methods
S. Zeng, C. Vuik and P. Wesseling
- On divergence-free wavelets K. Urban
- Sparse-grid finite-volume multigrid for 3D-problems P.W. Hemker
- A two-level additive Schwarz preconditioner for the stationary Stokes equations S.C. Brenner
- Analysis of preconditioning and multigrid for Euler flows with low-subsonic regions B. Koren and B. van Leer
- Multilevel preconditioning -- Appending boundary conditions by Lagrange multipliers A. Kunoht
- Tensor product type subspace splittings and multilevel iterative methods for anisotropic problems M. Griebel and P. Oswald

Submissions of articles and proposals for special issues are to be addressed to the Editors-in-Chief:

John C. Mason
School of Computing and Mathematics, University of Huddersfield,
Queensgate, Huddersfield, HD1 3DH, United Kingdom
E-mail: j.c.mason@hud.ac.uk

or

Charles A. Micchelli
Mathematical Sciences Department
IBM Research Center
P.O. Box 218, Yorktown Heights, NY 10598, USA E-mail: cam@yktvmz.bitnet

Requests for FREE SPECIMEN copies and orders for Advances in Computational Mathematics are to be sent to: E-mail: publish@baltzer.nl

From: "PROF.HEINZ W. ENGL" <engl@indmath.uni-linz.ac.at>
Subject: submission to digest
Date: Mon, 10 Jul 1995

Surveys on Mathematics for Industry (Springer, Vienna/New York)
Table of Contents, Vol.5 No.1

Application of iterative methods for solving nonsymmetric linear systems in the simulation of semiconductor processing
W.Schmid, M.Paffrath, and R.Hoppe

Improving manufacturing quality through planned experiments: statistical methodology M.Abt and F.Pukelsheim

Improving manufacturing quality through planned experiments: pressure

governor case study M.Abt, R.Mayer and F.Pukelsheim

Statistical design of experiments in industrial practice
C.Weih, Y.Berres, Y.-L.Grize

Information on this journal on the WWW:

<http://www.indmath.uni-linz.ac.at/>

This page also contains information about the work of the Chair for Industrial Mathematics at the Johannes Kepler Universitaet Linz (Austria) in Inverse Problems and in Industrial Mathematics.

Heinz W. Engl

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA-Contents
Date: Sat, 8 Jul 1995

LINEAR ALGEBRA AND ITS APPLICATIONS
Contents Volume 225, August 1995

Parallelogram-Law-Type Identities Omer Egecioglu

Orbits of Invariant Subspaces of Algebraic Linear Operators
Khalid Benabdallah and Bernard Charles

Note on Products of Bezoutians and Hankel Matrices
Gong-ning Chen and Hui-pin Zhang

Factorizations of Operator Matrices Lawrence A. Harris

Singular Values and Invariant Factors of Matrix Sums and Products
Joao F. Queiro and Eduardo M. Sa

Numerical Solutions for Large Sparse Quadratic Eigenvalue Problems
Jong-Sheng Guo, Wen-Wei Lin, and Chern-Shuh Wang

Opposite Littlewood-Richardson Sequences and Their Matrix Realizations
Olga Azenhas

Two-Sided Bounds for the Inverse of an H-Matrix L. Yu. Kolotilina

Determinantal Inequalities for Diagonally Signed Matrices and an
Application to Gram-Cauchy Matrices
P. R. Graves-Morris and C. R. Johnson

The Partial Trigonometric Moment Problem on an Interval: The Matrix Case
Daniel Alpay and Philippe Loubaton

Approximation Positive Contractante en Norme Trace Achouri Abdelhak

Extension de la Notion D'Operateur D-Symetrique. II
S. Bouali and J. Charles

A Propos des Algebres Verifiant $x^3 = u(x)3x$ C. Mallol and R. Varro

On Iterative Solution of Linear Equations Arising in BVPs of ODEs
Fridrich Sloboda and Fiorella Sgallari

Polynomial Roots: The Ultimate Answer? L. Brugnano and D. Trigiante

Some Remarks on a Theorem of Gudkov Tomasz Szulc

A Note on Generalized Diagonally Dominant Matrices Huang Tin-Zhu

----- end -----

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Book Announcement: Matrices of sign-solvable linear systems
Table of Contents: SIAM Review
Table of Contents: SIAM J. Applied Mathematics
Table of Contents: SIAM J. Optimization
Table of Contents: Numerical Algorithms

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: New Book Announcement
Date: Thu, 10 Aug 1995

NEW BOOK ANNOUNCEMENT

We are pleased to announce the publication of the book:

Matrices of sign-solvable linear systems

Richard A. Brualdi and Bryan L. Shader

Cambridge Tracts in Mathematics, No. 116
xii + 298, ISBN 0-521-48296-8
Cambridge University Press.

The list price of the book is \$49.95 but it will be offered in Cambridge's fall catalog at a 20% discount. A description of the book follows.

The sign-solvability of a linear system implies that the signs of the entries of the solution (or at least some of the entries) are determined solely on the basis of the signs of the coefficients of the system. That it might be worthwhile and possible to investigate such linear systems was recognized by Samuelson in his classic book *Foundations of Economic Analysis*. Sign-solvability is part of a larger study which seeks to study and understand the special circumstances under which an algebraic, analytic or geometric property of a matrix can be determined from the combinatorial arrangement of the positive, negative and zero elements of the matrix. These are thus properties shared by all members of a qualitative class of matrices. Several classes of matrices arise in this way, notably sign-nonsingular matrices, L-matrices, S-matrices, and sign-stable matrices. The essential idea of a sign-nonsingular matrix arose in a different context in the key 1963 paper *Dimer statistics and place transitions* by P.W. Kastelyn. The large and diffuse body of literature connected with sign-solvability is presented as a coherent whole for the first time in this book. Results in the

literature are presented in a new and organized way with many new connections established and with many new results and proofs. One of the features of this book is that algorithms that are implicit in many of the proofs have been explicitly described and their complexity has been commented on.

The book is intended primarily for researchers in combinatorics and linear algebra but it should be of interest to theoretical computer scientists, economists, physicists, chemists, engineers and other scientists. It should also be of interest to those who would like to see the beautiful interplay that it affords between combinatorics (especially, graph theory) and linear algebra.

The book is self-contained but it does assume that the reader is familiar with elementary linear algebra and has been introduced to some aspects of graph theory and combinatorial matrix theory.

From: nelson@siam.org
Subject: SIAM REVIEW, VOL.37, NO.3
Date: Mon, 14 Aug 95

SIAM REVIEW SEPTEMBER 1995 Volume 37, Number 3

Table of Contents

ARTICLES

Displacement Structure: Theory and Applications
Thomas Kailath and Ali H. Sayed

Convergence Rates for Markov Chains Jeffrey S. Rosenthal

CASE STUDY FROM INDUSTRY

Geometry of the Shoulder of a Packaging Machine
J. Boersma and J. Molenaar

CLASSROOM NOTES

A Motivational Example for the Numerical Solution of Two-Point
Boundary-Value Problems Stephen M. Alessandrini

Series, the Convergence of which should be Interpreted in the Sense of
L. Schwartz's Distributions Norbert Ortner and Peter Wagner

Spherical Harmonics Representation of an Inhomogeneous Plane Wave
Pratap N. Sahay

PROBLEMS AND SOLUTIONS

BOOK REVIEWS

Nonstandard Finite Difference Models of Differential Equations (Ronald
E. Mickens) Ravi P. Agarwal

Computer Intensive Statistical Methods (J.S. Urban Hjorth) R.J. Beran

Computer Aided Geometric Design (Josef Hoschek and Dieter Lasser)
Len Bos

One-dimensional Dynamics (W. de Melo and S. van Strien) K. M. Brucks

Modelling Covariances and Latent Variables Using EQS (G. Dunn,
B. Everitt, and A. Pickles) Wai Chan

Understanding the Infinite (Shaughan Lavine) Frederick Gass

Iterative Solution Methods (Owe Axelsson) Martin Hanke

Mathematical Modelling of Inelastic Deformation (J.F. Besseling and
E. van der Giessen) K.S. Havner

Characteristic of Distributed Parameter Systems (A.G. Butkovskiy and
L.M. Pustyl'nikov) Alan Jeffrey

An Introduction to Partial Difference Equations (M. Renardy and
R.C. Rogers) Philip Korman

Aspects and Applications of the Random Walk (G.H. Weiss) Gregory F.
Lawler

Asymptotic Behaviour of Solutions of Evolutionary Equations
(M.I. Vishik) Alexander Mielke

Normally Hyperbolic Invariant Manifolds in Dynamical Systems (Stephen
Wiggins) Kenneth J. Palmer

The Mathematical Theory of Finite Element Methods (Susanne C. Brenner
and L. Ridgway Scott) Joseph E. Pasciak

Geometric Concepts for Geometric Design (W. Boehm and H. Prautzsch)
Jorg Peters

Monotone Structure in Discrete-Event Systems (P. Glasserman and
D.D. Yao) Alexander Shapiro

Nonstandard Methods in the Calculus of Variations (Curtis Tuckey)
Peter A. Loeb

Statistical Models Based on Counting Processes (P.K.Andersen, O.Borgan,
R.D.Gill, and N.Keiding) Ian W.McKeague

Representation and Control of Infinite Dimensional Systems, Vols. 1 and
2 (A. Bensoussan, G. Da Prato, M. Delfour, and S. Mitter)
D.L. Russell

Stochastic Orders and their Applications (Moshe Shaked and J.George
Shanthikumar) Y.L. Tong

Algorithmic Algebra (B. Mishra) Franz Winkler

Linear Matrix Inequalities in System and Control Theory (S. Boyd,
L.E.Ghaoui, E. Feron, and V. Balakrishnan) V.A. Yakubovich

SELECTED COLLECTIONS

LATER EDITIONS

From: thomas@siam.org
Subject: SIAP 55-5 table of contents
Date: Thu, 03 Aug 95

SIAM JOURNAL ON Applied Mathematics OCTOBER 1995 Volume 55, Number 5

Table of Contents

- The Dynamics of Spray-Formed Billets Ian A. Frigaard
- Simulations of Unsteady Compressible Fluid Motion by an Interactive
Cored Particle Method Yoshifumi Ogami and Angela Y. Cheer
- The Oseen Drag at Infinite Reynolds Number
A. J. Weisenborn and B. I. M. ten Bosch
- Superheating Field of Type II Superconductors S. Jonathan Chapman
- A Mean-field Model of Superconducting Vortices in Three Dimensions
S. Jonathan Chapman
- Motion of Vortices in Type II Superconductors
S. Jonathan Chapman and G. Richardson
- Spatial Structure of the Focusing Singularity of the Nonlinear
Schrodinger Equation: A Geometrical Analysis
Nancy Kopell and Michael Landman
- A Finite Element/Spectral Method for Approximating the Time-Harmonic
Maxwell System in R^3 Andreas Kirsch and Peter Monk
- Elastic Herglotz Functions George Dassios and Zafiria Rigou
- Tip Reconstruction for the Atomic Force Microscope
Richard Miller, James Vesenka, and Eric Henderson
- Understanding Propagation Failure as a Slow Capture Near a Limit Point
Victoria Booth and Thomas Erneux
- A Dynamic Numerical Method for Models of the Urine Concentrating
Mechanism H. E. Layton, E. Bruce Pitman, and Mark A. Knepper
- Transport Equations and Indices for Random and Biased Cell Migration
Based on Single Cell Properties
Richard B. Dickinson and Robert T. Tranquillo
- Transonic Flow Around Optimum Critical Airfoils
Zvi Rusak

From: nelson@siam.org
Subject: SIAM J.OF OPTIMIZATION, VOL.5, NO.4
Date: Wed, 30 Aug 95

SIAM J.OF OPTIMIZATION VOLUME 5, NUMBER 4, NOVEMBER 1995

Table of Contents

Some Convergence Properties of the Modified Log Barrier Method for

Linear Programming M. J. D. Powell

Fast Interior Point Methods for Bipartite Matching Lov K. Grover

Convergence of a Factorized Broyden-like Family for Nonlinear Least Squares Problems Hiroshi Yabe and Naokazu Yamaki

Sequential Quadratic Programming with Penalization of the Displacement
J. F. Bonnans and G. Launay

Global Optimality Conditions and Their Geometric Interpretation for the Chemical and Phase Equilibrium Problem
Y. Jiang, W. R. Smith, and G. R. Chapman

The Molecule Problem: Exploiting Structure in Global Optimization
Bruce Hendrickson

An Information Global Optimization Algorithm with Local Tuning
Yaroslav D. Sergeyev

Potential Transformation Methods for Large-Scale Global Optimization
Jack W. Rogers, Jr. and Robert A. Donnelly

Existence and Regularity of Solutions to a Variational Problem of Mumford and Shah: A Constructive Approach Yang Wang

 From: publish@baltzer.nl (Baltzer Science Publishers)
 Subject: CONTENTS - NUMERICAL ALGORITHMS
 Date: Fri, 11 Aug 1995

NUMERICAL ALGORITHMS, Volume 9, No. 3 - 4, 1995, ISSN 1017 1398

Table of Contents

Splitting--integrating method for inverse transformation of
n-dimensional digital images and patterns Z.-C. Li

The work of Philip Rabinowitz on numerical integration
W. Gautschi

A universal constant for the convergence of Newton's method and an
application to the classical homotopy method J.-C. Yakoubsohn

On multivariate attenuation factors G. Steidl

Nonnegative surface fitting with Powell-Sabin splines
K. Willemans and P. Dierckx

Bivariate interpolatory rational splines C.K. Chui and T.X. He

Trigonometric interpolation and wavelet decompositions
J. Prestin and E. Quak

Testing nonlinear operators D. Lee and H. Wozniakowski

A quadrature formula for the Hankel transform R.G. Campos

A program for solving the L2 reduced-order model problem with fixed

denominator degree W. Krajewski, A. Lepschy, M. Redivo-Zaglia and U. Viaro

The e-algorithm for the identification of a transfer-function model:
some applications

C. Gonzalez Concepcion, V. Cano Fernandez and C. Gil Fariqa

Erratum to ``Additive Schwarz domain decomposition methods for elliptic
problems on unstructured meshes'' T.F. Chan and J. Zou

Book reviews / Author Index

NUMERICAL ALGORITHMS (ISSN 1017 1398). Volume 10, NO. 1-2, 1995.
Table of Contents

Computational aspects of Boolean cubature
G. Baszenski and F.-J. Delvos

Numerical computation of real or complex elliptic integrals
B.C. Carlson

On the evaluation of Hilbert transforms by means of a particular class of
Turan quadrature rules L. Gori and E. Santi

The evaluation of Legendre functions of the second kind
D.B. Hunter

Explicit representations of biorthogonal polynomials
A. Iserles and S.P. Norsett

Computation of limit periodic continued fractions. A survey
L. Lorentzen

Generalized Christoffel functions and error of positive quadrature
G. Mastroianni

Summation of series and Gaussian quadratures, II
G.V. Milovanovic

On five-diagonal Toeplitz matrices and orthogonal polynomials on the
unit circle J.M. Montaner and M. Alfaro

A recursive algorithm by the moments method to evaluate a class of
numerical integrals over an infinite interval
M. Morandi Cecchi and E. Pirozzi

Stieltjes polynomials and Gauss--Kronrod quadrature formulae for
measures induced by Chebyshev polynomials S.E. Notaris

Gaussian integration of Chebyshev polynomials and analytic functions
K. Petras

Submissions of articles and proposals for special issues are to be
addressed to the Editor-in-Chief:

Claude Brezinski
Laboratoire d'Analyse Numerique et d'Optimisation
UFR IEEA - M3

Universite des Sciences et Technologies de Lille
59655 Villeneuve d'Ascq Cedex
France
E-mail: brezinsk@omega.univ-lille1.fr

postal address:
Paris Drouot BP 18
75433 Paris Cedex 09
France

Requests for FREE SPECIMEN copies and orders for Numerical Algorithms are
to be sent to: E-mail: publish@baltzer.nl or see our homepage
<http://www.NL.net/~baltzer/>
----- end -----

IPNet Digest Volume 2, Number 09 October 1, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Conference: Inverse problems of Wave Propagation/Diffraction
Conference: Inverse Problems in Engineering: Theory and Practice
Conference: SIAM 1995 Annual Meeting" (and Other Conferences)
Positions: Postdoc Positions in Industrial Math / Inverse Problems
Comment: Relation of Current Engineering Practice to Inverse

Problems

Table of Contents: SIAM J. Mathematical Analysis
Table of Contents: SIAM J. Control and Optimization
Table of Contents: SIAM J. Applied Mathematics
Table of Contents: Linear Algebra and Its Applications
New Editors: Mathematics of Control, Signals, and Systems

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: sance prenom <Marie-Claude.Sance@inria.fr>
Subject: to all members of the IPNet
Date: Mon, 4 Sep 1995

CALL FOR PAPERS

Conference on inverse problems of wave propagation and diffraction
September 23-27, 1996, Aix les Bains (France)

Conference chairs

G. CHAVENT (Universite Paris-Dauphine/INRIA Rocquencourt, France)
P. C. SABATIER (Universite de Montpellier II, France)

Scientific committee

M. BERTERO (Universita di Genova, Italy)
G. CHAVENT (Universite Paris-Dauphine/INRIA Rocquencourt, France)
M. CHENEY (Rensselaer Polytechnic Institute, Troy, USA)
D. COLTON (University of Delaware, Newark, USA.)
H. W. ENGL (Johannes-Kepler-Universitaet, Linz, Austria)
R. EWING (Texas A&M University, College Station, USA)
A. FRIEDMAN (University of Minnesota, Minneapolis, USA)
R. KRESS (Universitaet Goettingen, Germany)
K. KUNISCH (Technische Universitaet Berlin, Germany))
A. K. LOUIS (Universitaet Saarbruecken, Germany)
W. RUNDELL (Texas A&M University, College Station, USA.)
P. C. SABATIER (Universite de Montpellier II, France)
W. SYMES (Rice University, Houston, USA)

Program committee

M. BERTERO (Universita di Genova, Italy)

G. BEYLKIN (University of Colorado, Boulder, USA)
 K. CHADAN (Universite d'Orsay, France)
 G. CHAVENT (Universite Paris-Dauphine/INRIA Rocquencourt, France)
 M. CHENEY (Rensselaer Polytechnic Institute, Troy, USA)
 D. COLTON (University of Delaware, Newark, USA.)
 H. W. ENGL (Johannes-Kepler-Universitaet, Linz, Austria)
 R. EWING (Texas A&M University, College Station, USA)
 A. FRIEDMAN (University of Minnesota, Minneapolis, USA)
 A. GRUNBAUM (University of California, Berkeley, USA)
 P. JOLY (INRIA Rocquencourt, Le Chesnay, France)
 R. KLEINMAN (University of Delaware, Newark, USA)
 R. KRESS (Universitaet Goettingen, Germany)
 K. KUNISCH (Technische Universitaet Berlin, Germany)
 A. LOUIS (Universitaet Saarbruecken, Germany)
 A. MASMOUDI (Universite Paul Sabatier/CERFACS, Toulouse, France)
 J-C. NEDELEC (Ecole Polytechnique, Paris, France)
 R.G. NEWTON (Indiana University, Bloomington, USA)
 E. R. PIKE (Kings College Strand, London, UK)
 W. RUNDELL (Texas A&M University, College Station, USA)
 P. C. SABATIER (Universite de Montpellier II, France)
 P. SACKS (Iowa State University, Ames, USA)
 S. STR=D6M (The Royal Institute of Technology, Stockholm, Sweden)
 W. SYMES (Rice University, Houston, USA)
 W. TABBARA (Ecole Superieure d'Electricite, Jouy-en-Josas, France)

Organization

M.-C. SANCE (INRIA Rocquencourt, France)
 A. THEIS-VIEMONT (INRIA Rocquencourt, France)

Presentation

This conference will be the 4th of a series devoted to different fields of inverse problems. The first conference on Inverse Problems in Diffusion Processes was organized in 1994 in St Wolfgang, Austria. It focussed on inverse problems which appear in the mathematical formulation of diffusion processes, either transient (parabolic partial differential equations) or steady-state (elliptic pde's). All questions related to the ill-posed nature of these problems, to their numerical analysis or to their applications were on the agenda. The success of this conference which brought together a comparable number of Americans, Europeans and some representatives from East-European countries was particularly remarkable. The second and third conferences, planned for 1995, respectively in the US and in Germany will deal with inverse problems in the fields of geophysics and medical imaging. A fourth conference will be organized in 1996 in France on the general theme "Inverse Problems of Wave Propagation and Diffraction" (especially acoustic and elastic waves, electromagnetic waves, quantum waves). The well known annual meeting of Montpellier, called RCP264, will not take place in 1996, in order to enable its usual attendants interested by the above mentioned topics to attend the present conference.

Objectives

The suggested theme "Modeling, Mathematical Analysis, and Numerical Solution of Inverse Problems of Wave Propagation and Diffraction" follows the overall theme of the series, focussed on validating inverse problems. Thus, the conference, partly issued from applied mathematics and partly from mathematical physics, has a large variety of fields of application, giving it a strong multidisciplinary character. Furthermore, taking into account the mathematical aspects of the overall theme, this conference has quite a small intersection with the sessions

devoted to inverse problems in conferences on acoustics, electromagnetism, or external geophysics.

The conference will put the same emphasis on the three fundamental steps of inverse modeling : modeling of inverse problems of a certain field, mathematical analysis of these problems, numerical solving. The organizers hope, thanks to the multidisciplinary character of the targeted audience, to incite successful exchanges between the specialists in applied fields, and those whose academic background and interest are more centered on mathematics: the first bringing problems and original models, the second solid mathematical tools.

The conference will host the workshop "Optimization of SER" organized by the GDR "Conception de Formes et de Calcul Scientifique", which will present the numerical results obtained by the participants on test problems already given out (end of 1994).

Dates to remember

Today : fill in and mail the reply-card to the INRIA conference office
March 1st, 1996 : contributions should be received by the INRIA conference office
April 15, 1996 : notification of acceptance or rejection to the authors
June 15, 1996 : mailing of the program
September 23-27, 1996 : conference

Instructions to authors

Authors should send an abstract and a full paper, or, as a minimum, a one page abstract, in 3 copies, before March 1st, 1996. The accepted papers will be distributed to the participants.

For sending contributions, please use only the following address :
INRIA Rocquencourt
M.-C. SANCE
Relations exterieures
Bureau des cours et colloques
B.P. 105
78153 LE CHESNAY Cedex (France)

Reply card

Conference on inverse problems of wave propagation and diffraction

September 23-27, 1996

Aix les Bains (France)

- I intend to participate to the conference
- I intend to submit a paper

Subject area :

Title :

Name :

First name :

Affiliation:

Address :

City :

Country :

Telephone :

Fax :

Email :

[Note: In the interest of space, it is the IPNet policy to transmit messages in one language only. For a French version of the above announcement, please contact the organizers. -Ed.]

From: kwoodbur@me.ua.edu (Keith A Woodbury)
Subject: 2icipe
Date: Wed, 6 Sep 1995

Please note the following announcement and call for papers. This announcement also appears on the WWW at URL
<http://www.me.ua.edu/inverse/2icipe.html>

Thanks,
Keith Woodbury (woodbury@me.ua.edu)

Inverse Problems in Engineering
First Announcement and Call for Papers/Posters

2nd International Conference on
INVERSE PROBLEMS IN ENGINEERING: THEORY AND PRACTICE
9-14 June 1996
Port aux Rocs
Le Croisic, France

Background

In engineering science, inverse approach is a discipline that is growing very rapidly. Inverse problems involve determining the unknown causes of known consequences. There are two main types:

- 1) The input estimation problem where the system parameters and output are known and for which the missing part of the input (boundary or initial conditions) are to be determined, and
- 2) The identification or parameter estimation problem, where the parameters are found given the input and output. This conference is a continuation of the June 1993 Palm Coast Conference. Each year for five years prior to the Palm Coast Conference, informal two-day seminars were organized by Professor J.V. Beck at Michigan State University. This conference also follows the November 1994 ISIP conference which was held in Paris. The French organizers of ISIP 94 join in support of this 1996 conference.

Scope of the Conference

The 1996 conference will address an exploding research area which already has had various practical applications. However, the industrial needs that are continuously increasing are far from being fulfilled. In fact, the refinement of numerical modeling, the intensive use of composite or other advanced materials, the improvement of data acquisition systems and emphasis on optimum design and control of highly sophisticated systems lead researchers to tackle new inverse problems.

The past conferences and seminars on inverse problems have shown that there are many underlying common mathematical interests shared between the various branches of which have interests in inverse methods. This is essential to sustain the momentum which has been given to the field of applied inverse techniques and to reinforce the links between modeling and experimentation.

The newest inverse techniques and applications will be presented. Several Keynote addresses from prominent researchers in the

field will be delivered. The ongoing problem of determining optimum experiment design through synergy of analysis and experimentation will be especially considered.

Outline

The program will include sessions on the following topics:

- * Mathematical Aspects and Techniques for Inverse Problems
 - Gradient Methods of Optimization
 - Iterative Regularization Methods
 - Methods for Multi-Dimensional Problems
 - Existence/Uniqueness/Stability Analysis
 - Filtering Techniques
- * Experimental Methods and Results
 - Design of Experiments
 - Process Control via Inverse Methods
 - Signal and Noise Processing
 - Measurement Models/Error Analysis
 - Property Estimation
 - Interface Problems
- * Heat Transfer
 - Multi-mode Heat Transfer/Coupled Problems
 - Identification of Unknown Sources
 - Inverse Scattering and Tomography
 - Inversion of Interferometric Data
 - Design of Optimum Forming and Solidification Processes
- * Engineering Mechanics
 - Fluid Mechanics/Rheology
 - Nondestructive Testing
 - Shape Optimization and Design
 - Acoustic/Vibrations

The conference will emphasize a broad range of deterministic and/or statistical mathematical computational and experimental approaches that can be applied to the solution of inverse and design problems. Inverse problems involving coupling between heat transfer and solid mechanics will be of special interest in this conference.

Submission, Selection, Publication and Presentation of Contributed Papers

Contributed papers are invited on original work in the above general areas. Presentations will be twenty-five minute talks followed by discussion. Authors should submit a one page abstract by October 15, 1995. Please use a format similar to that accompanying this announcement. Authors whose abstracts are accepted will be sent Author Kits which will include detailed instructions for preparation of the manuscript.

Conference proceedings will be published in a bound volume and are included in the conference fee. Copies of final papers will be available at the conference, and it is anticipated that the bound volume will be available mailed to conference participants by September 1996.

Deadlines

Abstracts Due	October 15, 1995
Notification of Abstract Acceptance	December 1, 1995
Full Papers Due for Review	February 15, 1996
Author Notification of Review Results	April 1, 1996
Final Papers due	May 15, 1996

Scientific Committee

Honorary Chair J.V. Beck (USA)
Chair D. Delaunay (France)
Co-Chairs M. Raynaud (France) K. Woodbury (USA)

O. Alifanov (Russia), E. Artyukhin (Russia), H.T. Banks (USA),
J.P. Bardon (France), H.D. Bui (France), H. Busby (USA), G. Chavent
(France), G. Demoment (France), G.S. Dulikravich (USA), G.M. Gladwell
(Canada), E. Hensel (USA), D.B. Ingham (UK), S. Kubo (Japan),
M. Lallemand (France), P. Lamm (USA), A. Maniatty (USA), N. McCormick
(USA), J.R. McLaughlin (USA), G. Milano (Italy), D.A. Murio (USA), H.G.
Natke (Germany), P. Pilvin (France), H.-J. Reinhardt (Germany),
M. Reynier (France), W. Rundell (USA), E.P. Scott (USA), N. Zabaraz
(USA)

Organizing Committee

S. Benet (France), D. Delaunay (France), B. Garnier
(France), Y. Jarny (France), D. Maillet (France), M. Raynaud
(France), J.J. Sera (France), K. Woodbury (USA)

Attendance at Conference

Attendance will be limited and will be by invitation only.
Persons wishing to attend the conference should submit an
information/application form (attached) by February 1, 1995.

Co-Sponsors

The current list of co-sponsors include the French Ministry of
Research (MESR), the French Ministry of Defense, the National Center of
Scientific Research (CNRS), and the Eurotherm Committee.

Engineering Foundation Conferences

Engineering Foundation Conferences were established in 1962 to provide
an opportunity for the exploration of problems and issues of concern to
engineering from many disciplines. The format of the conference
provides morning and evening sessions in which major presentations are
made. Available time is including during the afternoons for ad hoc
meetings and informal discussions and is designed to enhance rapport
among participants and promote dialogue on the developments of the
meeting. We believe the conferences have been instrumental in generating
ideas and disseminating information to a greater extent than is possible
through more conventional forums. All participants are expected to
contribute actively to the discussions.

Engineering Foundation Conferences Fellowship Program

The Engineering Foundation has announced a Conferences Fellowship
Program. Applicants are limited to those currently active in engineering
or related professions with a direct interest in the conference
topic. They must be within ten years of their B.S. degree at the time
their application is submitted. The stipend is sufficient to cover the
conference registration fee and on-site room and board. Transportation
expenses are not included. Application information may be obtained by
fax from EF or on WWW (www.engfnd.org/engfnd).

Conference Location

The conference will be held at the resort Port aux Rocs at Le Croisic,
France. The city of Le Croisic lies on the West Atlantic Coast of France
and is near the resort city of La Baule. It is a pretty and wild area
with a very pleasant climate in late spring. On site conference
participants can enjoy bicycling, miniature golf, billiards, archery,

ping-pong, and walking along the coast. Available nearby are sailing, riding, tennis and climbing. Le Croisic is directly connected by TGV to Nantes and Paris.

Conference Fees

The conference fee is all inclusive. It includes registration, accommodations, meals, taxes and gratuities from dinner on Sunday through lunch on Friday. The fees are tentatively set at:

Participant (single occupancy or sharing room with guest)	\$1195.
Participant (sharing room with another participant)	\$1095.
Bona fide graduate student (sharing room with participant)	\$ 805.
Guest (sharing room with participant; all meals)	\$ 485.

ATTENDANCE AT THIS CONFERENCE WILL BE LIMITED. IF YOU WISH AN INVITATION TO ATTEND THIS CONFERENCE, PLEASE RETURN THE ATTACHED INFORMATION FORM. SESSION CHAIRS AND INVITED SPEAKERS MAY USE THIS FORM TO PRE-REGISTER.

For further information, please contact:

Engineering Foundation

345 East 47th Street Room 303

New York, NY 10017

212-705-7837 - Fax: 212-705-7441 - E-mail:

engfnd@aol.com World Wide Web: <http://www.engfnd.org/engfnd>

INVERSE PROBLEMS IN ENGINEERING II CONFERENCE
CATEGORY FOR WHICH ABSTRACT IS BEING SUBMITTED
TITLE OF ABSTRACT

Author(s)

Institution/Company

Address

Phone, Fax and E-mail

Please submit your abstract in this format. Authors are responsible for correct content and format. The abstract should contain approximately 100 - 250 words. In no circumstances may the abstract exceed one page. Please use a typeface which is easily read and leave a one inch margin on all sides. If there is more than one author, the person making the presentation should have his or her name underlined.

Send your abstract to either:

Mlle. I. Mace

2nd Intl Conference on Inverse Problems

ISITEM La Chantreric

Rue Christian Pauc C.P. 3023

44087 NANTES Cedex 03 (FRANCE)

OR

Engineering Foundation

Inverse Problems Conference (96-AV)

345 East 47th Street

Suite #303

New York, NY 10017 (USA)

The deadline for receipt of abstracts is October 15, 1995.

INFORMATION/PRE-REGISTRATION FORM

Engineering Foundation Conferences

345 East 47th Street Suite 303 New York, NY 10017

212-705-7836; Fax: 212-705-7441; E-mail: engfnd@aol.com

2nd International Conference on

INVERSE PROBLEMS IN ENGINEERING: THEORY AND PRACTICE

9-14 June 1996

Port aux Rocs

Le Croisic, France

E-mail:

REQUEST FOR ADDITIONAL INFORMATION

Please send a copy of the program

I wish to submit a contributed paper - my abstract is enclosed

I wish to submit a contributed paper - my abstract has been sent to
Mlle. I. Mace

PRE-REGISTRATION

I am an invited speaker or session chair.

I am a member of the organizing committee.

EF USE ONLY

Date Rcvd:

Fwd Chair:

Approved:

Wait List:

From: meetings@siam.org

Subject: SIAM 1995 Annual Meeting

Date: Thu, 7 Sep 1995

To further improve its service to SIAM members and the math community in general, SIAM is pleased to announce that the 1995 SIAM Annual Meeting preliminary program, with the hotel and registration information, is NOW available on the World Wide Web. Point your browser to the URL:

<http://www.siam.org/meetings/an95/an95home.htm>

You can also find the call for participation announcements for the 1996 SIAM conferences at these URLs:

<http://www.siam.org/meetings/co96/cfp/co96home.htm> (Combustion)

<http://www.siam.org/meetings/ad96/cfp/ad96home.htm> (Computational
Differentiation)

<http://www.siam.org/meetings/dm96/cfp/dm96home.htm> (Discrete
Math)

<http://www.siam.org/meetings/op96/op96home.htm> (Optimization)

Any questions that you may have in relation to the aforementioned meeting and conferences, please contact: meetings@siam.org

Any comments or suggestions that you may have concerning the formats of these announcements on the World Wide Web, please contact: melvin@siam.org

We look forward to your participation and attendance at any of these meetings.

SIAM Conference Department

From: "PROF.HEINZ W. ENGL" <engl@indmath.uni-linz.ac.at>

Subject: submission for digest

Date: Fri, 15 Sep 1995

Open Postdoc Positions in Industrial Mathematics

At the Chair for Industrial Mathematics at the Johannes Kepler University in Linz (Austria), a full-time research position is to be filled immediately (now for 18 months, renewable for up to 4 years). The position is financed by industry and involves research in inverse problems, especially in connection with parameter identification and inverse heat conduction problems that arise in steel industry. Good knowledge about the numerical solution of pdes is essential, knowledge about inverse problems is desirable. The gross annual salary will be (depending on prior experience and age) between 360.000 and 420.000 Austrian Schilling. Citizens of E.C. countries and of Switzerland and Norway do not need visa or work permit, others do.

In a few months, a second position of the same type will probably be open.

Applications should be sent to Prof. Heinz W. Engl, Chair for Industrial Mathematics, Johannes Kepler University, A-4040 Linz, Austria. E-Mail: engl@indmath.uni-linz.ac.at

Information about the Chair for Industrial Mathematics can be obtained in the WWW at

<http://www.indmath.uni-linz.ac.at/>

Prof. Dr. Heinz W. Engl	E-Mail: engl@indmath.uni-linz.ac.at
Industriemathematik	or na.engl@na-net.ornl.gov
Institut fuer Mathematik	secretary: nikolaus@indmath.uni-linz.ac.at
linz.ac.at	
Johannes-Kepler-Universitaet	Phone: +43-(0)732-2468; ext.9219 or
693,	
Altenbergerstrasse 69	secretary: 9220; home: +43-(0)732-
245518	
A-4040 Linz	Fax: +43-(0)732-2468855
Oesterreich / Austria	Telex: 2-2323 uni li a

From: (Dr. James Beck) <beck@egr.msu.edu>
Subject:
Date: Tue, 26 Sep 95

PERSPECTIVE ON THE RELATION OF CURRENT ENGINEERING PRACTICE TO INVERSE PROBLEMS

This contribution has two purposes. One is to stimulate conversation among engineers and others who perform experiments and estimate parameters. It gives a general framework which I see many engineers (and others) working. The second purpose is to give mathematicians and others an understanding of the common experimental-analytical paradigms for unknown processes and their relationship to the study of inverse problems. I would be happy to hear from anyone who would like to discuss these ideas further.

Below are some thoughts on two current research paradigms in engineering. These paradigms are contrasted with what I consider to be a more powerful paradigm - which is actually part of the subject of inverse problems. This third type is familiar to the inverse problems community but it is not widely known or practiced in engineering.

Common Research Paradigms in Engineering

Two types of paradigms in engineering research are commonly used.

Type A involves investigating a "simple" phenomena and a single parameter is found using a simple algebraic equation. Type B has its objective to verify that the model is satisfactory to describe a certain phenomena.

Common Paradigm of Type A

In the type A paradigm, a process has an unknown such as thermal conductivity, heat transfer coefficient, diffusion coefficient, Young's modulus, or friction coefficient. Although the mathematical model for the phenomena may be complex, the final equation for finding the parameter of interest is usually quite simple, frequently as an algebraic equation.

The other part of the type A procedure involves an experiment. The experiments is selected to produce measurements that are compatible with the model. From these measurements and the model, the parameter is determined.

Common Paradigm of Type B

In the type B of the common paradigm, an incompletely understood engineering process is investigated in two distinct and complementary ways: one uses experiments and the other uses analytical or computer modeling. The first part involves an analytical model. This can involve the solution of ordinary or partial differential equations. Any needed constants are found from the literature or completely separate experiments of Type A which are found by breaking the problem into several independent parts. After all the parts are found, they are assembled into one large model and a prediction is made for some experimental conditions.

An experimental effort produces measurements for the same process. No interaction between the analysis and the experiment for the complete process is allowed. The experimental group in effect "throws over the wall" the data and description of the experiment to the analytical group.

Then a figure of overall results is produced, comparing those from the model and the experiment. Characteristically, the comparison of the graphical results is visual and not quantitative. Instead the agreement is usually simply said to be "satisfactory" or even "excellent," showing that the model is also satisfactory. An important point is that the results of the experiment and analysis are purposely kept apart until the last possible moment, and then compared only on same plot. The intent is to avoid any "knobs" to turn to get agreement between the model and the measurements. Results of the model may be not used to modify and improve the experiment; similarly the model may not be modified based on the experiment.

New Research Paradigm in Engineering - Involving Inverse Problems: Type C

In the "new research paradigm," Type C paradigm, the emphasis is upon combined and interactive experiments and analysis. The concepts of experiment design and "stretching and straining" the model enters. Computers are used both in the experiments, modeling and estimating of parameters or determining better models. The paradigm is now described in more detail.

The paradigm is directed toward understanding some physical engineering process that has some unknown aspects. A first objective is to identify what is unknown. This in turn leads to the design of an experiment that will provide measurements that can be used to determine

what is unknown. Two aspects should be considered at this point. First, the errors (or uncertainty) of the measuring devices(s) should be understood and quantified. The second aspect is that the experiment should be optimally designed, as much as possible without precisely knowing all the parameters or possibly the correct model. A simulation should be performed to see if the experiment will reveal what is thought to be unknown. This then requires some interaction with the analysis/modeling group in the beginning of the investigation. The purpose is to reveal if the experiment has the potential to determine the unknowns.

Then the experiment is performed. After that, the analysis is performed (possibly involving finite differences or elements). Instead of simply performing a direct calculation and comparing the results in a graphical fashion, the analysis now includes an inverse algorithm for estimating some parameters or functions. This estimation algorithm may be nonlinear and involve iteration. The residual principle may be used in which the estimated standard deviation between the measurements and the estimated values are made to be about equal to the expected measurement errors. The residuals are examined to determine any systematic trends or signatures. Confidence regions are constructed.

After the experiment has been analyzed, it may be possible to improve the experiment using optimality concepts. Furthermore the residuals might give some insight for improving the model.

An important point is that this Type C paradigm does not require breaking the problem into a number of parts (Type A experiments). In some cases it may still be very wise to do that. However, there are cases in which the individual parts are not independent. For example, some materials change (dry, burn, ablate, cure, etc.) during the process; in such cases the Type B paradigm is not adequate. In other cases, the desired result is a function of time, such as a time-dependent heating condition, which cannot be found by the Type B paradigm.

I would appreciate any comments.

James V. Beck, Professor (beck@egr.msu.edu)
Department of Mechanical Engineering
A231 Engineering Building
Michigan State University
East Lansing, MI 48824 Tel no. 517-355-8487, Fax: 517-353-1750

From: spiegelman@siam.org
Subject: SIMA 26-6 (11/95) TOC
Date: Thu, 07 Sep 95

SIAM Journal on Mathematical Analysis Vol 26, No 6, November 1995
CONTENTS

Stability for Systems of Conservation Laws in Several Space Dimensions
C. M. Dafermos

A Comparison of Two Viscous Regularizations of the Riemann Problem for Burgers's Equation M. Slemrod

On Scalar Conservation Laws with Point Source and Discontinuous Flux Function Stefan Diehl

On the Slow Motion of Vortices in the Ginzburg--Landau Heat Flow
Jacob Rubinstein and Peter Sternberg

A Uniqueness Result for a Generalized Radon Transform
B. L. Fridman

Monotonicity and Invertibility of Coefficient-to-Data Mappings for
Parabolic Inverse Problems Paul DuChateau

Analyticity of Solutions of the Generalized Korteweg--de Vries Equation
with Respect to Their Initial Values Bing-Yu Zhang

Convergence of Double Obstacle Problems to the Generalized Geometric
Motion of Fronts Ricardo H. Nochetto and Claudio Verdi

Instability and Blow-up of Solutions to a Generalized Boussinesq
Equation Yue Liu

Smoothing Properties, Decay, and Global Existence of Solutions to
Nonlinear Coupled Systems of Thermoelastic Type
Jaime E. Munoz Rivera and Reinhard Racke

Perturbed Scale-Invariant Initial Value Problems in One-Dimensional
Dynamic Elastoplasticity Michael K. Gordon

Coupled Parabolic and Hyperbolic Equations Modeling Age-Dependent
Epidemic Dynamics with Nonlinear Diffusion
Chaocheng Huang and Jiongmin Yong

Singular Perturbation Theory for Homoclinic Orbits in a Class of
Near-Integrable Dissipative Systems Gregor Kovacic

A Simple Proof of Fryant's Theorem M. K. Vemuri

New Bounds for Hahn and Krawtchouk Polynomials Holger Dette

From: thomas@siam.org
Subject: SICON 33-6
Date: Wed, 20 Sep 95

SIAM JOURNAL ON CONTROL AND OPTIMIZATION NOVEMBER 1995 Vol 33, No 6
CONTENTS

Rendezvous Search on the Line with Indistinguishable Players
Edward J. Anderson and Skander Essegaier

Optimal Programs on Infinite Horizon 1 A. J. Zaslavski

Optimal Programs on Infinite Horizon 2 A. J. Zaslavski

COCOLOG: A Conditional Observer and Controller Logic for Finite Machines
Peter E. Caines and Suning Wang

Remarks on Nonlinear Stochastic Partial Differential Equations: An
Application of the Splitting-up Method Noriaki Nagase

Solution of Optimal Control Problems by a Pointwise Projected Newton
Method C. T. Kelley and E. W. Sachs

On the Adaptive Control of Jump Parameter Systems via Nonlinear Filtering
Peter E. Caines and Ji-Feng Zhang

Periodic Stability of Nonlinear Flexible Systems with Damping
Koichiro Naito

Identification for Parabolic Distributed Parameter Systems with
Constraints on the Parameters and the State Wenhuan Yu

A Convex Approach to the Mixed H_2/H_∞ Control Problem for
Discrete-Time Uncertain Systems
J. C. Geromel, P. L. D. Peres, and S. R. Souza

Finite-Dimensional Risk-Sensitive Control Problem
Alain Bensoussan and Robert J. Elliott

On the Topology of the Karush-Kuhn-Tucker Set under
Mangasarian-Fromovitz Constraint Qualification Harald Gunzel

Pontryagin Maximum Principle for Semilinear and Quasilinear Parabolic
Equations with Pointwise State Constraints Bei Hu and Jiongmin Yong

Risk-Sensitive Control on an Infinite Time Horizon
Wendeffman-Taylor Fingers Robert Almgren

Numerical Integrations of Systems of Conservation Laws of Mixed Type
Shi Jin

Traveling Waves Solution of Convection-Diffusion Systems Whose
Convection Terms Are Weakly Nonconservative: Application to the
Modeling of Two-Phase Fluid Flows Lionel Sainsaulieu

Stability Analysis for the Immersed Fiber Problem
John M. Stockie and Brian T. R. Wetton

Crack Propagation Models for Rock Fracture in a Geothermal Energy
Reservoir Alistair D. Fitt, Amanda D. Kelly, and Colin P. Please

Periodic Folding of Thin Sheets L. Mahadevan and Joseph B. Keller

The Onset and End of the Gunn Effect in Extrinsic Semiconductors
Luis L. Bonilla and Francisco J. Higuera

Symmetric and Antisymmetric Pulses in Parallel Coupled Nerve Fibres
Amitabha Bose

Analysis of a Delayed Two-Stage Population Model with Space-Limited
Recruitment Yang Kuang and Joseph W.-H. So

Effects of Randomness of Risk Factors on the HIV Epidemic in Homosexual
Populations Wai-Yuan Tan, Si Chin Tang, and Sho Rong Lee

Eigenvalues of the Far Field Operator for the Helmholtz Equation in an
Absorbing Medium David Colton and Rainer Kress

An Inverse Problem for an Elastoplastic Medium Alemdar Hasanov

The Geometrical Description of the Nonlinear Dynamics of a Multiple
Pendulum V. Zharnitsky

Dynamics in a Discrete Nagumo Equation: Spatial Topological Chaos
Shui-Nee Chow and Wenxian Shen

On a Discrete-Time Nonlinear System Associated with the Second-Order
Digital Filter Zbigniew Galias

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA, Contents
Date: Mon, 11 Sep 1995

LINEAR ALGEBRA AND ITS APPLICATIONS Volume 229, November 1, 1995
CONTENTS

Iterative Schemes for the Least 2-Norm Solution of Piecewise Linear
Programs Krzysztof C. Kiwiel

Bellman's Inequality Changqin Xu

Multiplicity of Integer Roots of Polynomials of Graphs Isabel Faria

Products of Involutory Matrices Over Rings
F. A. Arlinghaus, L. N. Vaserstein, and Hong You

Matrix Decompositions Using Displacement Rank and Classes of Commutative
Matrix Algebras Carmine Di Fiore, Paolo Zellini

Projection-Minimization Methods for Nonsymmetric Linear Systems
Khalide Jbilou

Sums and Products of Two Quadratic Matrices Jin-Hsien Wang

Interpenetration of Ellipsoids and the Polynomial Bound of a Matrix
John A. Holbrook

Positive Definite Constrained Least-Squares Estimation of Matrices
H. Hu

Solving Linear Systems Involved in Constrained Optimization
Yixun Shi

From: "Lieke v.d. Eersten-Schultze" <Lieke.Schultze@cwi.nl>
Subject: MCSS
Date: Thu, 28 Sep 1995

Contributed by Jan H. van Schuppen
(J.H.van.Schuppen@cwi.nl)

MCSS WELCOMES NEW ASSOCIATE EDITORS

The Editorial Board of the journal Mathematics of Control, Signals, and
Systems (MCSS) has been extended with four new Associate Editors:

- J.-M. Coron
 (Ecole Normale Supérieure de Cachan, Cachan, France)
- M.R. James
 (Australian National University, Canberra, Australia)
- V. Kharitonov
 (St. Petersburg University, St. Petersburg, Russia
 /temporarily at CINVESTAB-IPN, Mexico, D.F., Mexico)
- A. Rantzer
 (Lund Institute of Technology, Lund, Sweden)

The Editors are happy that these capable and outstanding researchers are willing to assist with the operation of the journal.

Information on MCSS including tables of contents is available at its home pages:

- <http://www.cwi.nl/cwi/departments/BS3/mcss.html>
- <http://www.math.rutgers.edu/~sontag/mcss.html>

Papers must be submitted to:

J.H. van Schuppen (Co-Editor MCSS)
CWI
P.O. Box 94079
1090 GB Amsterdam
The Netherlands

Bradley Dickinson, Eduardo Sontag, Jan van Schuppen (Editors)
----- end -----

IPNet Digest Volume 2, Number 10 October 31, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Question: Stopping Criteria for CG Solution of Inverse Problems
Meeting: Inverse Problems Symposium - Preliminary Program
Winter School: Iterative Methods in Scientific Computing
Call for Proposals: AMS-SIAM Seminar in Applied Mathematics
New Monograph: The Radon Transform and Local Tomography
New Publication: Numerical Solution of Boundary Value Problems
Call for Papers: Surveys on Mathematics for Industry
Table of Contents: Surveys on Mathematics for Industry
Table of Contents: Computational and Applied Mathematics
Table of Contents: J. Mathematical Systems, Estimation, Control
Table of Contents: Annals of Numerical Mathematics
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: Martin.Haas@RUS.Uni-Stuttgart.DE
Subject: Question in Inverse Problems
Date: Tue, 31 Oct 1995

Solving a system of linear equations resulting from an ill-posed problem requires some kind of regularization. This again poses the problem of determining a suitable regularization parameter. I've tried truncated SVD in connection with AKAIKE's information criterion AIC what works quite well. I'm now looking for a way to use this criterion (of statistical nature) in connection with conjugate gradients. Does anyone know how to modify this criterion so that it might work as stopping rule for CG-Algorithms?

Thank you very much for your help,
Sincerely yours,

Martin Haas

From: flores@siam.org
Subject: IP95 Preliminary Program WWW
Date: Thu, 12 Oct 95

The preliminary program for the 1995 SIAM Inverse Problems Symposium is now available on the web. The url is:

<http://www.siam.org/meetings/ip95/ip95home.htm>

FYI, attendees can register and make hotel and shuttle reservations through either a fill-in form that can be submitted directly to SIAM or a postscript file than can be downloaded and faxed or mailed.

From: Raymond Chan <rchan@math.cuhk.hk>
Subject: School: Iterative Methods in Scientific Computing
Date: Thu, 12 Oct 1995

Winter School on Iterative Methods in
Scientific Computing and Their Applications

Second Announcement
=====

Host by: The Institute of Mathematical Sciences
The Chinese University of Hong Kong, Hong Kong

December 14--20, 1995

Main Invited Lecturers and Sample Topics:
=====

Tony Chan (UCLA):	Domain Decomposition, Image Processing.
Jack Dongarra (U. of Tennessee):	Algorithms, Libraries.
Howard Elman (U. of Maryland):	Stokes problems, Oseen Problems.
Gene Golub (Stanford):	Error Estimation, Inner-Outer Iterations.
Franklin Luk (RPI):	Signal and Image Processing.
David Silvester (UMIST):	FEM, Navier-Stokes Equations.
Gilbert Strang (MIT):	Wavelets, Filters.
Henk van der Vorst (U. of Utrecht):	Krylov Methods, Implementation.
Andy Wathen (UK):	Stokes Problems, Preconditioning.
Jinchao Xu (Penn. State):	Multilevel Methods, Convergence Theory.

School Model
=====

It will be a seven-day school with 10 main invited speakers. Each main speaker will give three 40-min lectures. There will also be several other lectures given by speakers from the Asian region. There will be 5-6 lectures per day except for the fourth day which will be reserved for excursion or social activities. Demonstration and exercise sessions will be at the end of each day. Lecture notes of the School will be distributed to attendees.

Call for Posters
=====

The School will have a poster session for participants to exhibit their research results. Authors are invited to submit their papers (maximum four pages) on any topics related to scientific computing. Please send the papers electronically or in hard copy form to

Dr. K.M. Yeung
Department of Mathematics
Chinese University of Hong Kong
Shatin, Hong Kong
Email: kmyeung@cuhk.hk

Deadline for submission is December 1, 1995.

Registration
=====

Registration fee is US\$100 which includes all lecture notes to be distributed at the School. To receive the registration form, please send

request to Dr. K.M. Yeung at address above. A latex file of the form can be obtained by anonymous ftp at
<ftp://ims.cuhk.hk/conf/winter/regs.tex>.

General Information

=====

Detail information of the School can be obtained at
<http://www.math.cuhk.hk/conference/dec95/info.html>.

From: blackmore@siam.org
Subject: AMS-SIAM Applied Math Committee
Date: Wed, 11 Oct 95

CALL FOR PROPOSALS
AMS-SIAM SUMMER SEMINARS IN APPLIED MATHEMATICS

The AMS-SIAM Committee on Applied Mathematics is seeking proposals for a seminar in applied mathematics of (typically) two weeks duration in Summer, 1997.

The AMS solicits grant funds to pay travel and subsistence costs of speakers, administrative costs, and partial travel and subsistence for participants.

These summer seminars are held annually. This year, the seminar was held in Park City, Utah on "Mathematics of Numerical Analysis," organized by Steve Smale (UC Berkeley).

The 1996 seminar, organized by Gang George Yin (Wayne State University) and Qing Zhang (University of Georgia), concerns "Mathematics of Stochastic Manufacturing Systems."

The proposal should consist of a title, paragraphs descriptive of the subject, proposed dates, and a proposed organizing committee.

The deadline for proposals for 1997 has been extended to November 10, 1995. For proposals for consideration for the 1998 summer seminar, the deadline will be September 1, 1996.

Please send proposals, or requests for further information, to Jim Demmel, UC Berkeley, demmel@cs.berkeley.edu, 510-643-5386.

From: Alexander Ramm <Alexander.Ramm@imag.fr>
Subject:
Date: Mon, 09 Oct 95

The following is the table of contents of the forthcoming monograph by A.G.RAMM and A.I.KATSEVICH "THE RADON TRANSFORM AND LOCAL TOMOGRAPHY" CRC Press, Boca Raton, 1996

Table of Contents

- Chapter 1: Introduction
- Chapter 2: Properties of the Radon transform and inversion formulas
- Chapter 3: Range Theorems and reconstruction algorithms
- Chapter 4: Singularities of the Radon transform
- Chapter 5: Local Tomography

Chapter 6: Pseudolocal Tomography
Chapter 7: Geometrical tomography
Chapter 8: Inversion of incomplete tomographic data
Chapter 9: Inversion of cone-beam data
Chapter 10: Radon transform of distributions
Chapter 11: Abel-type integral equation
Chapter 12: Multidimensional algorithm for finding discontinuities of
 signals from noisy discrete data
Chapter 13: Test of randomness and its applications
Chapter 14: Auxiliary Results
Research Problems
Bibliographical notes
Bibliography
Index

[This Digest item was edited for length. Please contact the contributor
for a complete Table of Contents. -ed.]

From: Uri Ascher <ascher@cs.ubc.ca>
Subject: Boundary Value ODE book
Date: Wed, 4 Oct 1995

Dear Colleagues,

Our book,
 Numerical Solution of Boundary Value Problems
 for Ordinary Differential Equations

has recently been published with SIAM in the Classics series and is now
available. The first edition of this book, published in 1988 by
Prentice-Hall, became unavailable in 1993. The current edition contains
many small corrections but no major ones. Also, it's in a softcover
volume and is significantly cheaper than the original edition. Those of
you who are interested in this field may find the book very helpful.

Please feel free to contact SIAM for further information:
siam@siam.org

ISBN 0-89871-354-4

Uri Ascher, Bob Mattheij and Bob Russell

From: "PROF.HEINZ W. ENGL" <engl@indmath.uni-linz.ac.at>
Subject: Call for Papers
Date: Wed, 11 Oct 1995

Surveys on Mathematics for Industry

CALL FOR PAPERS

Surveys on Mathematics for Industry (Springer Vienna / New York)
is
now entering its sixth year of existence. I want to take
this
opportunity to
- urge you to subscribe to the journal
- issue a call for papers.

While in the starting years, we published nearly exclusively invited articles, we want to continue opening up the journal for submitted papers (which will, of course, also be refereed).

The main goal of the journal is to contribute to bridging the gap between university and industry by

- the presentation of mathematical methods relevant for industry
- the exposition of industrial problems which are of interest to mathematicians.

To achieve this goal, the journal publishes (exclusively in English):

1. Surveys on new mathematical techniques
2. Surveys on established mathematical techniques with a new range of applications
3. Surveys on industrial problems for which appropriate mathematical models or methods are not yet available
4. Articles comparing mathematical models or methods for particular industrial problems
5. Articles describing mathematical modelling techniques
6. Broad historical surveys
7. Articles of general interest about the use of mathematics in industry
8. Occasional book reviews and reports about conferences in the field of Industrial Mathematics.

As you see, we publish only SURVEYS, not original research papers, on topics in or relevant to Industrial Mathematics. We realize that it is a lot of work to write a good survey and therefore encourage prospective authors to submit short proposals to the Managing Editor describing the subject area and the emphasis of intended papers for a preliminary assessment of the suitability for the journal.

Information on the journal including abstracts of published papers can be obtained in the WWW via
<http://www.indmath.uni-linz.ac.at/>

Address of the Editorial Office:

Prof.Dr.Heinz W. Engl
Chair for Industrial Mathematics

Johannes Kepler Universitdt
A-4040 Linz, Austria
Fax: +43-(0)732-2468855
E-Mail: engl@indmath.uni-linz.ac.at

Heinz W. Engl, Managing Editor

From: "PROF.HEINZ W. ENGL" <engl@indmath.uni-linz.ac.at>
Subject: Surveys on Mathematics for Industry
Date: Wed, 11 Oct 1995

Surveys on Mathematics for Industry (Springer Vienna - New York)

Table of Contents, Vol 5 No.2

M.Holmstrvm, R.Glowinski, Constrained motion problems with applications
by nonlinear programming methods

A.Ude, R.Dillmann, Robot motion specification: a vision-based
approach

Heinz W. Engl, Managing Editor

Abstracts: <http://www.indmath.uni-linz.ac.at/>

From: Carlos Antonio de Moura <demoura@dee.ufc.br>
Subject: COMP and APPL MATH contents (V14,2,'95)
Date: Tue, 3 Oct 1995

COMPUTATIONAL AND APPLIED MATHEMATICS
(Matematica Aplicada e Computacional)

Published by Birkhauser/Boston and SBMAC - Brazilian Soc. for Comp. and
Applied Mathematics

Vol.14, Issue 2, 1995

Stability clearing open loop policies in manufacturing systems
AFPC HUMES and C HUMES Jr

Subsistence of some nonlinear mathematical models which involve the
heat-diffusion eq. LR BERRONE

An elliptic regularity coefficient estimate for the equations of the
motion for nearly elastic solids in the frequency domain X FENG

Identification of a nonlinear parameter in a parabolic equation from a
linear equation XC TAI and T KARKKAAINEN

On the blow-up of $|u_{tt}|$ at quenching for semilinear
Euler-Poisson-Darboux equations CY CHEN and KK NIP

A frequency domain parameter estimation procedure in viscoelastic
layered media MG ARMENTANO, EM FERNANDEZ-BEDAGUER and JE SANTOS

Corrigenda to "Generalizations of Bendixon's Negative Criterion"
A BREAZNA

From: hyman@birkhauser.com (Elizabeth Hyman)
Subject: JMSEC contents
Date: Fri, 6 Oct 1995

Journal of Mathematical Systems, Estimation, and Control Vol 5, No. 4
1995
Submitted by Edwin Beschler, October 6, 1995

TABLE OF CONTENTS

On the Characterization and Parametrization of Minimal Spectral Factors,
P.A. Fuhrmann

On the Existence of a Least and Negative-Semidefinite Solution of
the Discrete-Time Algebraic Riccati Equation, Harald K. Wimmer

Conditions for Average Optimality in Markov Control Processes with
Unbounded Costs and Controls,
Ra=FAl Montes-de-Oca and On=E9simo Hern=Elndez-Lerma

Summary: Approximation for an Integro-Partial Differential Equation
with Strongly Singular Kernel, Richard H. Fabiano

Summary: Graph Structure and Recursive Estimation of Noisy Linear
Relations, Ramine Nikoukhah, Darrin Taylor, Bernard C. Levy, and Alan
S. Willsky

Summary: Global Solutions for Differential/Algebraic Systems and
Implications for Lyapunov Direct Stability Methods,
Robert Mahony and Iven Mareels

Summary: Regions of Attraction of Closed Loop Linear Systems with
Saturated Linear Feedback, Rodolfo Su=Elrez, Jos=E9 Alvarez, and Jes=FAS
Alvarez

[The extraneous characters are as submitted. -ed.]

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: ANNALS OF NUMERICAL MATHEMATICS - CONTENTS
Date: Mon, 9 Oct 1995

CONTENTS - ANNALS OF NUMERICAL MATHEMATICS (ISSN 1021 2655)
Editor-in-Chief: Claude Brezinski

Volume 2, 1995, "Special Functions"
Editor: G. Allasia

W. Gautschi, Luigi Gatteschi's work on special functions and numerical
analysis

C. Brezinski, Formal orthogonality on an algebraic curve

K.-J. Foerster, On the weights of positive quadrature formulas for
ultraspherical weight function

E.K. Infantis and P.D. Siafarikas, Differential inequalities and
monotonicity properties of the zeros of associated Laguerre and Hermite
polynomials

F. Marcellan, T.E. Perez and M.A. Pinar, Orthogonal polynomials on weighted Sobolev spaces: the semiclassical case

P. Maroni, Tchebychev forms and their perturbed as second degree forms

P. Rabinowitz, Optimal quasi-interpolatory splines for numerical integration

A. Ronveaux and S. Belmehdi, Interlacing properties of the zeros of the derivative, associated and adjacent of semi-classical and classical orthogonal polynomials

J. Wimp and H. Kiesel, Non-linear recurrence relations and some derived orthogonal polynomials

R. Wong, Error bounds for asymptotic approximations of special functions

R. Zanovello, Numerical analysis of Struve functions with applications to other special functions

D. Dattoli, S. Lorenzutta, G. Maino and A. Torre, Generalised forms of Bessel functions and Hermite polynomials

M.G. de Bruijn, H.G. Meijer, Zeros of orthogonal polynomials in a non-discrete Sobolev space

B. Gabutti and M.L. Mathis, A characterization of the Meixner polynomials

C. Giordano, Properties and inequalities for the zeros of Bessel functions

D. Kershaw, Maximum principles and inequalities for special functions

J. Korevaar, A monotonicity property of ultraspherical Christoffel numbers

K.H. Kwon and L.L. Littlejohn, The orthogonality of the Laguerre polynomials $\{L_n^{-k}(x)\}$ for positive integers k

D.S. Lubinsky, An extension of the Erdos-Turan inequality for the sum of successive fundamental polynomials

A.P. Magnus, Asymptotics for the simplest generalized Jacobi polynomials recurrence coefficients from Freud's equations: numerical explorations

A. Martin, An optimal inequality on associated Legendre functions

M.E. Muldoon, A monotonicity property of Bessel functions

F. Peherstorfer and R. Steinbauer, On polynomials orthogonal on several intervals

G. Pittaluga and L. Sacripante, Bounds for the zeros of Hermite polynomials

A. Sidi, Acceleration of convergence of (generalized) Fourier series by the d - transformation

H.V. Smith, The Bieberach conjecture

N.M. Temme, Asymptotics of zeros on incomplete gamma functions

M. von Golitschek and D. Leviatan, Rational Muntz approximation

A. Zarzo, J.S. Dehesa and J. Torres, On a new set of polynomials representing the wave functions of the quantum relativistic harmonic oscillator

A. Zarzo, J.S. Dehesa and R.J. Yanez, Distribution of zeros of Gauss and Kummer hypergeometric functions. A semiclassical approach

Proposals for new volumes should be addressed to Claude Brezinski , Editor-in-Chief. Subscriptions and separate orders and requests for FREE SAMPLE COPIES of Annals of Numerical Mathematics can be sent to: publish@baltzer.nl or see our homepage <http://www.NL.net/~baltzer/>.

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA Contents
Date: Mon, 16 Oct 1995

LINEAR ALGEBRA AND ITS APPLICATIONS Contents Volumes 223/224
Special Issue Dedicated to Miroslav Fiedler and Vlastimil Ptak

Zdenek Vavrin, Miroslav Fiedler and Vlastimil Ptak: Life and Work

Daniel Alpay and Vladimir Bolotnikov, Two-Sided Interpolation for Matrix Functions With Entries in the Hardy Space

T. Ando, Majorization Relations for Hadamard Products

H. Arizmendi and V. Muller, On Algebras Without Generalized Topological Divisors of Zero

Wayne W. Barrett, Michael E. Lundquist, Charles R. Johnson, and Hugo J. Woerdeman, Completing a Block Diagonal Matrix With a Partially Prescribed Inverse

LeRoy B. Beasley and Shumin Ye, Linear Operators Preserving L-Matrices

Roberto Bevilacqua, Nazzareno Bonanni, and Enrico Bozzo, On Algebras of Toeplitz Plus Hankel Matrices

Rajendra Bhatia and Chandler Davis, A Cauchy-Schwarz Inequality for Operators With Applications

Alberto Borobia, On the Nonnegative Eigenvalue Problem

Richard A. Brualdi and Amelia Fonseca, Colorability of Induced Matroids

Aniekan A. Ebiefung, Existence Theory and Q-Matrix Characterization for the Generalized Linear Complementarity Problem

Miroslav Engliš, Toeplitz Operators and the Berezin Transform on H^2

M. I. Gekhtman and M. Shmoish, On Invertibility of Nonsquare Generalized Bezoutians

Andrea Gombani, On the Schmidt Pairs of Multivariable Hankel Operators

and Robust Control

Michael M. Green and Alan N. Willson, Jr., Transistor Circuits and Potentially Stable Operating Points

Peter Gritzmann, Victor Klee, and Bit-Shun Tam, Cross-Positive Matrices Revisited

Martin H. Gutknecht and Marlis Hochbruck, The Stability of Inversion Formulas for Toeplitz Matrices

Sy-Ming Guu and Richard W. Cottle, On a Subclass of P_0

Georg Heinig, Matrix Representations of Bezoutians

Roger A. Horn, Norm Bounds for Hadamard Products and an Arithmetic-Geometric Mean Inequality for Unitarily Invariant Norms

Charles R. Johnson, William D. McCuaig, and David P. Stanford, Sign Patterns that Allow Minimal Semipositivity

Charles R. Johnson and Pablo Tarazaga, Connections Between the Real Positive Semidefinite and Distance Matrix Completion Problems

Jaroslav Kautsky and Radka Turcajova, Discrete Biorthogonal Wavelet Transforms as Block Circulant Matrices

Udo R. Krieger, On a Two-Level Multigrid Solution Method for Finite Markov Chains

Monique Laurent and Svatopluk Poljak, On a Positive Semidefinite Relaxation of the Cut Polytope

Chi-Kwong Li and Nam-Kiu Tsing, Linear Maps Relating Different Unitary Similarity Orbits or Different Generalized Numerical Ranges

Raphael Loewy and Stephen Pierce, Linear Preservers of Balanced Nonsingular Inertia Classes

Ivo Marek, On Square Roots of M -Operators

Reinhard Nabben and Richard S. Varga, On Classes of Inverse Z -Matrices

Barry W. Peyton, Alex Pothén, and Xiaoqing Yuan, A Clique-Tree Algorithm for Partitioning a Chordal Graph Into Transitive Subgraphs

Jiri Rohn, Checking Bounds on Solutions of Linear Interval Equations is NP-Hard

Karla Rost and Zdenek Vavrin, Recursive Solution of Lowner-Vandermonde Systems of Equations. II

Ronald L. Smith, Some Results on a Partition of Z -Matrices

P. G. Spain, A Discrete Variation on Kronecker's Theorem

P. G. Spain, Tracking Poles, Representing Hankel Operators, and the Nehari Problem

Roman Sznajder and M. Seetharama Gowda, Generalizations of P_0 - and

P-Properties, Extended Vertical and Horizontal Linear Complementarity Problems

Reha H. Tutuncu and Michael J. Todd, Reducing Horizontal Linear Complementarity Problems

George Visick, A Weak Majorization Involving the Matrices A , B and AB
----- end -----

IPNet Digest Volume 2, Number 11 December 1, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

- Deadlines for Upcoming SIAM Meetings
- Second SIAM Conference on Sparse Matrices
- 1996 SIAM Student Travel Award Announcement
- 1996 Reid Prize -- Call for Nominations
- New Book: The Science of Computer Benchmarking
- Table of Contents: SIAM Review
- Table of Contents: SIAM J. on Numerical Analysis
- Table of Contents: SIAM J. on Computing
- Table of Contents: SIAM J. on Mathematical Analysis
- Table of Contents: SIAM J. on Control and Minimization
- Table of Contents: SIAM J. on Matrix Analysis
- Table of Contents: SIAM J. on Scientific Computing
- Table of Contents: Mathematics of Control, Signals, and Systems
- Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: flores@siam.org
Subject: Announcement
Date: Wed, 29 Nov 95

DATES TO REMEMBER

December 1, 1995

Deadline for submission of contributed abstracts for
Eighth SIAM Conference on Discrete Mathematics
June 17-20, 1996
Johns Hopkins University
Baltimore, Maryland

December 4, 1995

Deadline for advance registration for
SIAM Symposium on Inverse Problems: Geophysical
Applications
December 16-19, 1995
Marriott Tenaya Lodge, Yosemite

December 8, 1995

Deadline for submission of minisymposium proposals
and short course proposals for
1996 SIAM Annual Meeting
July 22-26, 1996

Hyatt Regency Crown Center
Kansas City, Missouri

January 5, 1996

Deadline for hotel reservation for
ACM-SIAM Annual Symposium on Discrete Algorithms
January 28-30, 1996
Sheraton Colony Square Hotel
Atlanta, Georgia

January 9, 1996

Deadline for submission of contributed abstracts for
1996 SIAM Annual Meeting
July 22-26, 1996
Hyatt Regency Crown Center
Kansas City, Missouri

Deadline for hotel reservation for
Second International Workshop on Computational
Differentiation
February 12-15, 1996
La Fonda Hotel
Santa Fe, New Mexico

January 12, 1996

Deadline for advance registration for
ACM-SIAM Annual Symposium on Discrete Algorithms
January 28-30, 1996
Sheraton Colony Square Hotel
Atlanta, Georgia

To submit abstracts, register, or obtain additional information
on these meetings do browse or contact these sources:

World Wide Web: <http://www.siam.org/conf.htm>
E-Mail: meetings@siam.org
Telephone: 215-382-9800
Fax: 215-386-7999

SIAM
3600 University City Science Center
Philadelphia, PA 19104

From: flores@siam.org
Subject: Announcement
Date: Mon, 27 Nov 95

SIAM
Society for Industrial and Applied Mathematics
3600 University City Science Center
Philadelphia, PA 91904-2688

AN INVITATION TO PARTICIPATE...

Second SIAM Conference on Sparse Matrices

October 9-11, 1996
The Coeur d'Alene Resort
Coeur d'Alene, Idaho

Organizers

Esmond G. Ng, Oak Ridge National Laboratory
Daniel J. Pierce, The Boeing Company

Program Committee

Ake Bjorck, Linkoping University, Sweden
Iain S. Duff, Rutherford Appleton Laboratory, United Kingdom and CERFACS, France
Roland W. Freund, AT&T Bell Laboratories
J. Alan George, University of Waterloo, Canada
John R. Gilbert, Xerox Palo Alto Research Center
Gene H. Golub, Stanford University
Esmond G. Ng, Oak Ridge National Laboratory
Daniel J. Pierce, The Boeing Company
Horst D. Simon, Silicon Graphics Computer Systems

Invited Plenary Speakers

The organizers and program committee will be inviting three plenary speakers to give presentations on current sparse matrix research. The information will appear in the conference program which will be available in mid-July, 1996.

Conference Themes

- o Applications
- o Iterative Methods for Non-Hermitian Matrices
- o Parallel Sparse Direct Methods
- o Preconditioning Techniques
- o Sparse Eigenvalue Computations
- o Sparse Methods in Optimization
- o Sparse Regularization and Rank-Deficient Methods
- o Structured matrices

Conference Scope

The field of Sparse Matrices is a broad and important area of the computational sciences that includes structured matrices and those with seemingly little or no structure. The relevance of the field is highlighted by the wide range of application areas that require the exploitation of matrix sparsity/structure in order to achieve a solution given real world constraints on computing resources and/or time.

The Second SIAM Conference on Sparse Matrices will bring together scientists working in the field of sparse matrix computations and those formulating problems resulting in sparse matrix problems. The intent is to provide a venue for the exchange of problems, ideas, new results and a discussion of future trends.

As a community we have experienced significant advancements since the

last SIAM Conference on Sparse Matrices held at Salishan Lodge in Glen Eden Beach, Oregon. This conference will allow us to come together to assess our achievements and to look to the challenges of future problem.

How to Participate

The program committee invites you to participate in this exciting conference by submitting an extended abstract not more than one page in length. The abstract should include the title, the author's name, mailing address, e-mail address, and the name of speaker (if jointly authored). Please include a list of keywords (at most 5) in order of importance.

Electronic submissions are encouraged. If you need a LaTeX macro to format your one-page, single-spaced extended abstract, send your request for a macro to meetings@siam.org.

Completed abstracts should be sent to each of the following:

meetings@siam.org
esmond@msr.epm.ornl.gov
dpierce@espresso.rt.cs.boeing.com

and should arrive on or before APRIL 15, 1996 to be considered for presentation.

The committee will select from the abstracts, long presentations (1 hour) and short presentations (30 minutes).

Conference Format

The meeting will be similar to that of the 1989 SIAM Symposium on Sparse Matrices. This will be a 3-day meeting. There will be about six 1-hour talks that will NOT occur in parallel and short presentations (30 minutes each) scheduled in parallel. We expect to limit the number of parallel sessions to three.

Conference Location

The conference will be held in Coeur d'Alene, Idaho, at The Coeur d'Alene Resort. The resort is located right on Lake Coeur d'Alene among the Bitterroot Mountains of Northern Idaho. It is 45 minutes by car from Spokane International Airport in Spokane, Washington. In early October the days should be sunny and the nights cool and clear.

World Wide Web

Information regarding the conference can be accessed in electronic format through the World Wide Web: <http://www.siam.org/conf.htm>

Registration Information

The conference program, registration information, and hotel reservation form will be available in mid-July 1996. To ensure receiving your copy, complete and return the reply card.

Please return this form to:
SIAM
3600 University City Science Center
Philadelphia, PA 19104-2688 USA
Telephone: 215-382-9800

Fax: 215-386-7999
E-Mail: meetings@siam.org
WWW: http://www.siam.org/conf.htm

Second SIAM Conference on Sparse Matrices
October 9-11, 1996
The Coeur d'Alene Resort
Coeur d'Alene, Idaho

I am interested in giving a presentation.
 Enclosed is a one page extended abstract.
 I have submitted my one page extended abstract electronically.
 Send me a LaTeX macro for submitting a one page extended abstract.

I am interested in attending the conference.
 Send me registration information and the conference program.

Please send me:
 Information about SIAM membership.
 Individual Academic Institution Corporate
 SIAM Activity Group on Linear Algebra

 Information about SIAM exhibits.
 Information about advertising in SIAM News.

I am a member of: ACM AMS IEEE SIAM
 ILAS Other

Please print
Name
First MI Last
Organization
Department
Address
City State Zip
Telephone
Fax
E-Mail

From: blackmore@siam.org
Subject: 1996 SIAM Student Travel Award Announcement
Date: Tue, 14 Nov 95

Student Travel Awards for 1996 SIAM Conferences and Annual Meeting

During 1996, SIAM will make several awards for \$300 to support student travel to the following SIAM conferences:

Seventh ACM-SIAM Symposium on Discrete Algorithms, January 28-30, Atlanta, Georgia

Second Workshop on Automatic Differentiation of Algorithms: Theory Implementation, and Application, February 12-15, Santa Fe, New Mexico

Sixth International Conference on Numerical Combustion, March 4-6,

New Orleans, Louisiana

Fifth SIAM Conference on Optimization, May 20-22, Victoria, British Columbia, Canada

Eighth SIAM Conference on Discrete Mathematics, June 17-20, Baltimore, Maryland

SIAM Annual Meeting, July 22-26, Kansas City, Missouri

Second SIAM Symposium on Sparse Matrices, October 9-11, Couer D'Alene, Idaho

The awards are to be made from the SIAM Student Travel Fund, created in 1991 and maintained through book royalties donated by generous SIAM authors.

Any full-time student in good standing is eligible to receive an award. Top priority will be given to students presenting papers at the meeting, with second priority to students who are co-authors of papers to be presented at the meetings. Only students traveling more than 100 miles to the meetings are eligible for the awards.

An application for a travel award must include: (1) a letter from the student stating the meeting for which support is being requested; (2) a letter from the student's advisor or department chair stating that the applicant is a full-time student in good standing; (3) if applicable, the title(s) of the paper(s) to be presented (co-authored) by the student at the meeting.

Applications should be sent to the SIAM Office (Attn.: SIAM Student Travel Awards), 3600 University City Science Center, Philadelphia, PA 19104-2688. Students also may apply by e-mail to blackmore@siam.org or by fax to 215-386-7999, but the letter from the advisor or department chair must be an original, sent by postal mail.

Complete applications must be received at the SIAM office no later than one month before the first day of the meeting for which support is requested.

Winners will be notified two weeks before the first day of the meeting. Checks for the awards will be given to the winning students when they arrive at the given meeting and check in at the SIAM Registration Desk.

For further information about these awards, please contact Donna Blackmore in the SIAM office by phone at (215) 382-9800 or e-mail, blackmore@siam.org.

From: blackmore@siam.org
Subject: 1996 Reid Prize -- Call for Nominations
Date: Thu, 30 Nov 95

Second Reid Prize To Be Awarded
at SIAM Annual Meeting in Kansas City

SIAM is soliciting nominations for the 1996 W.T. and Idalia Reid Prize in Mathematics. The prize, established in memory of

long-time University of Oklahoma mathematics professor W.T. Reid, who died in 1977, recognizes outstanding work in the areas of differential equations and control theory. The recipient will be asked to present a lecture at the 1996 SIAM Annual Meeting in Kansas City, where the prize will be awarded.

The prize was awarded for the first time in 1994 to Wendell Fleming of Brown University, who was cited for his pioneering research in geometric measure theory, the calculus of variations, differential games, and stochastic control and filtering, as well as for his generous nurturing of generations of applied mathematicians and his loyal service to the mathematical sciences community.

Letters of nomination for the prize should be sent to Reid Prize, SIAM, 3600 University City Science Center, Philadelphia, PA 19104-2688; fax: (215) 386-7999. Additional information can be obtained from Donna Blackmore at (215) 382-9800 or blackmore@siam.org.

Nominations must be submitted to SIAM by January 1, 1996.

From: Prof Roger Hockney <R.W.Hockney@ecs.soton.ac.uk>
Subject: submit
Date: Fri, 1 Dec 95

I have recently published a book with SIAM, entitled:

"The Science of Computer Benchmarking"
Roger W. Hockney
ISBN 0-89871-363-3

Available at the SIAM stand, Supercomputing95, San Diego

Published November 1995, it consists of 129 pages and is a softcover volume at US\$ 21.25. Those of you interested in computer benchmarking and performance analysis should find the book valuable. It is a tutorial exposition of the methodology and low-level benchmarks of the Parkbench committee's report on parallel computer benchmarking, together with the dimensionless theory of scaling and the graphical presentation of results. It is suitable as a teaching text for tutorials, advanced undergraduate and MSc courses. The chapter headings are:

Chapter-1: "Introduction" - survey of Parkbench committee and other benchmarking activities, and the usefulness of benchmarking.

Chapter-2: "Methodology" - units, symbols and performance metrics with examples. Critique of Speedup.

Chapter-3: "Low-level Parameters and Benchmarks" - tutorial definition of the r-infinity and n-half performance parameters, and the benchmarks to measure them.

Chapter-4: "Computational Similarity and Scaling" -

dimensionless theory of scaling with the principle of "Computational Similarity".

Chapter-5: "Presentation of Results" - The Univ. of Tennessee's "Performance Database Server" and the Univ. of Southampton's "Graphical Benchmark Information Service".

Prepayment is required and shipping charge will apply. Please contact SIAM for further ordering information: service@siam.org

Or the author regarding the book itself:

Roger W. Hockney
(Professor Emeritus, Reading University, UK)
(Visiting Professor, Southampton University, UK)
e-mail: rwh@ecs.soton.ac.uk
Ordinary mail: 4 Whitewalls Close, Compton, Newbury, England, UK.
Telephone: +44 (1635) 578 679 (also fax after speaking).

From: tschoban@siam.org
Subject: SIREV 37-4 Table of Contents
Date: Tue, 07 Nov 95

SIAM Review
DECEMBER 1995 Volume 37, Number 4

Articles

Korn's Inequalities and Their Applications in Continuum Mechanics
C. O. Horgan

A Rank-One Reduction Formula and Its Applications to Matrix Factorizations
Moody T. Chu, Robert E. Funderlic, and Gene H. Golub

Historical Development of the Newton-Raphson Method
Tjalling J. Ypma

The Approximation Problem for Drift-Diffusion Systems
Joseph W. Jerome

Using Linear Algebra for Intelligent Information Retrieval
Michael W. Berry and Susan T. Dumais

Classroom Notes in Applied Mathematics

A Unified Proof of Two Theorems in Statistics A. N. Al-Hussaini

Applying Elementary Probability Theory to the NBA Draft Lottery
Stephen G. Penrice

On Floating-Point Summation T. O. Espelid

Problems and Solutions

Book Reviews

First-order Representations of Linear Systems (Margreet Kuijper),
J. D. Aplevich

The Mathematical Theory of Dilute Gases (C. Cercignani, R. Illner,
and M. Pulvirenti), Claude Bardos

A Friendly Guide to Wavelets (Gerald Kaiser), Michael Frazier
Periodic Motions (Miklos Farkas), H. I. Freedman

Parallel Computing Using the Prefix Problem (S. Lakshmivarahan and
Sudarshan K. Dhall), E. Gallopoulos

Statistical Methods for Groundwater Monitoring (Robert D. Gibbons),
Edward J. Gilroy

An Introduction to the Modeling of Neural Networks (P. Peretto),
Christopher W. Myers and Frank H. Guenther

Analysis and Control of Nonlinear Infinite Dimensional Systems
(Viorel Barbu), Philip Korman

Multivariate Statistical Modelling Based on Generalized Linear
Models (Ludwig Fahrmeir and Gerhard Tutz), Brian D. Marx

Laws of Small Numbers: Extremes and Rare Events (Michael Falk, Jurg
Husler, and Rolf-Dieter Reiss), George L. O'Brien

Measurement, Regression, and Calibration (Philip J. Brown), S.
Panchapakesan

Mathematical Aspects of Geometric Modeling (Charles A. Micchelli),
Ewald Quak

Nonlinear Problems of Elasticity (Stuart S. Antman), Michael
Renardy

The Riemann-Hilbert Problem (D. V. Anosov and A. A. Bolibruch),
Yasutaka Sibuya

Dynamical Systems: Stability, Dynamics, and Chaos (Clark Robinson),
Russell Walker

Control Under Lack of Information (A. N. Krasovskii and N. N.
Krasovskii), Jiongmin Yong

Selected Collections

Later Editions

Chronicle

From: tschoban@siam.org
Subject: SINUM 32-4 Table of Contents
Date: Fri, 10 Nov 95

SIAM Journal on Numerical Analysis
AUGUST 1995, Volume 32, Number 4
CONTENTS

A Fast Solver for Navier-Stokes Equations in the Laminar Regime
Using Mortar Finite Element and Boundary Element Methods
Y. Achdou and O. Pironneau

Projection Method I: Convergence and Numerical Boundary Layers
Weinan E and Jian-Guo Liu

Numerics and Hydrodynamic Stability: Toward Error Control in
Computational Fluid Dynamics
Claes Johnson, Rolf Rannacher, and Mats Boman

Convergence of Particle Methods with Random Rezoning for the Two-
Dimensional Euler and Navier-Stokes Equations
Y. Brenier and G.-H. Cottet

Particle Approximation of a Linear Convection-Diffusion Problem
with Neumann Boundary Conditions S. Mas-Gallic

Multigrid Smoothing Factors for Red-Black Gauss-Seidel Relaxation
Applied to a Class of Elliptic Operators Irad Yavneh

Numerical Solutions of One-Pressure Models in Multifluid Flows
Fabienne Berger and Jean-Francois Colombeau

Finite Element Approximation of Time Harmonic Waves in Periodic
Structures Gang Bao

Error Estimates on a New Nonlinear Galerkin Method Based on Two-
Grid Finite Elements Martine Marion and Jinchao Xu

Convergence of a Second-Order Scheme for the Nonlinear Dynamical
Equations of Elastic Rods Richard S. Falk and Jian-Ming Xu

Optimal Selection of the Bubble Function in the Stabilization of
the P1-P1 Element for the Stokes Problem Roger Pierre

Thermal Simulation of Pipeline Flow Philip T. Keenan

Spectral Approximation of a Boundary Condition for an Eigenvalue
Problem Anne-Sophie Bonnet-Bendhia and Nabil Gmati

Finite Element Vibration Analysis of Fluid-Solid Systems Without
Spurious Modes
A. Bermudez, R. Duran, M. A. Muschietti, R. Rodriguez, and J. Solomin

Runge-Kutta Solutions of Stiff Differential Equations Near
Stationary Points Ch. Lubich, K. Nipp, and D. Stoffer

A Product-Decomposition Bound for Bezout Numbers
Alexander P. Morgan, Andrew J. Sommese, and Charles W. Wampler

December 1995, Volume 32, Number 6
CONTENTS

Stability and Convergence of a Class of Enhanced Strain Methods
B. D. Reddy and J. C. Simo

Adaptive Finite Element Methods for Parabolic Problems IV:
Nonlinear Problems Kenneth Eriksson and Claes Johnson

Adaptive Finite Element Methods for Parabolic Problems V: Long-Time
Integration Kenneth Eriksson and Claes Johnson

A Spectral Method for the Fluid Flow with Low Mach Number on the
Spherical Surface Guo Benyu and Cao Weiming

On the Finite Element Method for Mixed Variational Inequalities
Arising in Elastoplasticity Weimin Han and B. Daya Reddy

A Domain Decomposition Method for the Polar Factorization of
Vector-Valued Mappings J.-D. Benamou

Finite Difference Calculus Invariant Structure of a Class of
Algorithms for the Nonlinear Klein-Gordon Equation
Shaofan Li and Loc Vu-Quoc

Operator Splitting Methods Applied to Spectral Discretizations of
Quantum Transport Equations Anton Arnold and Christian Ringhofer

A Morphological Scheme for Mean Curvature Motion and Applications
to Anisotropic Diffusion and Motion of Level Sets
Francine Catte, Françoise Dibos, and Georges Koepfler

Approximation Methods for Singular Integral Equations with
Conjugation on Curves with Corners
V. D. Didenko, S. Roch, and B. Silbermann

The Essential Stability of Local Error Control for Dynamical
Systems A. M. Stuart and A. R. Humphries

Relative Perturbation Techniques for Singular Value Problems
Stanley C. Eisenstat and Ilse C. F. Ipsen

A New Recurrence for Computing Runge-Kutta Truncation Error
Coefficients M. E. Hosea

From: spiegelman@siam.org
Subject: SICOMP 25-1 TOC
Date: Mon, 13 Nov 95

SIAM Journal on Computing
Volume 25, Number 1, February 1996

Asymptotic Conditional Probabilities: The Unary Case
Adam J. Grove, Joseph Y. Halpern, and Daphne Koller

A Fast Derandomization Scheme and Its Applications Yijie Han

Weighted Multidimensional Search and Its Application to Convex
Optimization
Richa Agarwala and David Fernandez-Baca

Ray Shooting amidst Convex Polyhedra and Polyhedral Terrains in Three
Dimensions Pankaj K. Agarwal and Micha Sharir

A New Characterization of Type-2 Feasibility
B. M. Kapron and S. A. Cook

Linear Time and Memory-Efficient Computation Kenneth W. Regan

On the Composition of Zero-Knowledge Proof Systems
Oded Goldreich and Hugo Krawczyk

The Isomorphism Conjecture Holds Relative to an Oracle
Stephen Fenner, Lance Fortnow, and Stuart A. Kurtz

A Unified Approach to Dynamic Point Location, Ray Shooting, and Shortest
Paths in Planar Maps
Yi-Jen Chiang, Franco P. Preparata, and Roberto Tamassia

From: spiegelman@siam.org
Subject: SIMA 27-1 TOC
Date: Tue, 14 Nov 95

SIAM Journal on Mathematical Analysis
JANUARY 1996, Volume 27, Number 1
CONTENTS

An Unusual Minimization Principle for Parabolic Gradient Flows
Lawrence C. Evans

Existence of Periodic Solutions for Equations of Evolving Curves
Yoshikazu Giga and Noriko Mizoguchi

Fully Nonlinear Stochastic Partial Differential Equations
G. Da Prato and L. Tubaro

Capillary Wedges Revisited Paul Concus and Robert Finn

Global Existence of Solutions for the System of Compressible Adiabatic
Flow through Porous Media L. Hsiao and D. Serre

A Spatial Decay Estimate for the Hyperbolic Heat Equation
R. Quintanilla

Convergence of the Child Langmuir Asymptotics of the Boltzmann Equation
of Semiconductors Naoufel Ben Abdallah

Rigorous WKB for Finite Order Linear Recurrence Relations with Smooth
Coefficients
Ovidiu Costin and Rodica Costin

Time Periodic Quasi Linear Reaction Diffusion Equations
Mary M. Legner and Victor L. Shapiro

Periodic and Positive Wave Front Solutions of Semilinear Diffusion
Equations Jose M. Fraile and Jose Sabina de Lis

Analysis of the Domain Integral Operator for Anisotropic Dielectric
Waveguides H. P. Urbach

When the Long Time Behavior Is Independent of the Initial Density
Andrzej Lasota and James A. Yorke

A Center Unstable Manifold Theorem for Parametrically Excited Surface
Waves Lawrence Turyn

The Regularization of Linear Differential Algebraic Equations
Leonid V. Kalachev and Robert E. O'Malley, Jr.

Stability and Convergence of Extension Schemes to Continuous Functions
in General Metric Spaces E. Le Gruyer and J. C. Archer

Convolution Operators for Radial Basis Approximation
Jeremy Levesley, Yuan Xu, Will Light, and Ward Cheney

Orthogonal Wavelets on the Cantor Dyadic Group W. Christopher Lang

From: thomas@siam.org
Subject: SICON 34-1
Date: Thu, 16 Nov 95

SIAM Journal on Control and Minimization
JANUARY 1996 Volume 34, Number 1

Infinite-Horizon Linear-Quadratic Regulator Problems for Nonautonomous
Parabolic Systems with Boundary Control
Paolo Acquistapace and Brunello Terreni

On the Averaged Stochastic Approximation for Linear Regression
Laszlo Gyorfi and Harro Walk

On a Certain Parameter of the Discretized Extended Linear-Quadratic
Problem of Optimal Control Ciyong Zhu

Bellman Equations of Risk-Sensitive Control H. Nagai

Optimal Control of the Blowup Time Emmanuel N. Barron and Wenxiong Liu

A Smooth Converse Lyapunov Theorem for Robust Stability
Yuandan Lin, Eduardo D. Sontag, and Yuan Wang

Deterministic Approximation for Stochastic Control Problems
R. Sh. Liptser, W. J. Runggaldier, and M. Taksar

Finite-Dimensional Filters with Nonlinear Drift IV: Classification of
Finite-Dimensional Estimation Algebras of Maximal Rank with State-Space
Dimension 3 Jie Chen, Stephen S.-T. Yau, and Chi-Wah Leung

Dynamic Programming for Nonlinear Systems Driven by Ordinary and
Impulsive Controls Monica Motta and Franco Rampazzo

Asymptotic Stability of the Optimal Filter with Respect to Its Initial
Condition Daniel Ocone and Etienne Pardoux

Nondegenerate Solutions and Related Concepts in Affine Variational
Inequalities M. C. Ferris and J. S. Pang

Constrained LQR Problems in Elliptic Distributed Control Systems with
Point Observations Zhongai Ding, Link Ji, and Jianxin Zhou

Average Optimality in Markov Control Processes via Discounted-Cost
Problems and Linear Programming Onesimo Hernandez-Lerma, Jean B.
Lasserre

Approximations in Dynamic Zero-Sum Games I
Mabel M. Tidball and Eitan Altman

On an Investment-Consumption Model with Transaction Costs
Marianne Akian, Jose Luis Menaldi, and Agnes Sulem

Adaptive Control via a Simple Switching Algorithm
Ji Feng Zhang and Peter E. Caines

Multiplicative Interior Gradient Methods for Minimization Over the
Nonnegative Orthant Alfredo N. Iusem, B. F. Svaiter, and Marc Teboulle

From: tschoban@siam.org
Subject: SIMAX 17-1 Table of Contents
Date: Thu, 16 Nov 95

SIAM Journal on Matrix Analysis
JANUARY 1996, Volume 17, Number 1
CONTENTS

The Set of 2-by-3 Matrix Pencils - Kronecker Structures and Their
Transitions Under Perturbations Erik Elmroth and Bo Kagstrom

On the Stability of Cholesky Factorization for Symmetric
Quasidefinite Systems
Philip E. Gill, Michael A. Saunders, and Joseph R. Shinnerl

Preconditioning Reduced Matrices Stephen G. Nash and Ariela Sofer

Residual Bounds on Approximate Solutions for the Unitary
Eigenproblem Ji-Guang Sun

A QL Procedure for Computing the Eigenvalues of Complex Symmetric
Tridiagonal Matrices Jane K. Cullum and Ralph A. Willoughby

Total Least Norm Formulation and Solution for Structured Problems
J. Ben Rosen, Haesun Park, and John Glick

Solution of Vandermonde-Like Systems and Confluent Vandermonde-Like
Systems Hao Lu

A Schur Method for Low-Rank Matrix Approximation
Alle-Jan Van Der Veen

Jacobi Angles for Simultaneous Diagonalization
Antoine Souldoumiac and Jean-Francois Cardoso

Application of ADI Iterative Methods to the Restoration of Noisy
Images D. Calvetti and L. Reichel

Stability of Symmetric Ill-Conditioned Systems Arising in Interior
Methods for Constrained Optimization
Anders Forsgren, Philip E. Gill, and Joseph R. Shinnerl

Numerical Methods for Nearly Singular Constrained Matrix Sylvester
Equations Ali R. Ghavimi and Alan J. Laub

From: tschoban@siam.org

Subject: SISC 17-1 Table of Contents
Date: Thu, 16 Nov 95

SIAM Journal on Scientific Computing
JANUARY 1996, Volume 17, Number 1
CONTENTS

Calculation of Pseudospectra by the Arnoldi Iteration
Kim-Chuan Toh and Lloyd N. Trefethen

Choosing the Forcing Terms in an Inexact Newton Method
Stanley C. Eisenstat and Homer F. Walker

Fast Nonsymmetric Iterations and Preconditioning for Navier-Stokes
Equations Howard Elman and David Silvester

Analysis of Semi-Toeplitz Preconditioners for First-Order PDES
Lina Hemmingsson and Kurt Otto

ODE Recursions and Iterative Solvers for Linear Equations
Alfred A. Lorber, Graham F. Carey, and Wayne D. Joubert

Solution of Dense Systems of Linear Equations in the
Discrete-Dipole Approximation Jussi Rahola

Equivariant Preconditioners for Boundary Element Methods
Johannes Tausch

Performance Issues for Iterative Solvers in Device Simulation
Qing Fan, P. A. Forsyth, J. R. F. McMacken, and Wei-Pai Tang

A Multigrid Preconditioner for the Semiconductor Equations
Juan C. Meza and Ray S. Tuminaro

Multigrid Waveform Relaxation on Spatial Finite Element Meshes: The
Discrete-Time Case Jan Janssen and Stefan Vandewalle

Implicit Extrapolation Methods for Multilevel Finite Element
Computations Michael Jung and Ulrich Rude

On Red-Black SOR Smoothing in Multigrid Irad Yavneh

Multilevel Image Reconstruction with Natural Pixels
Van Emden Henson, Mark A. Limber, Stephen F. McCormick, and Bruce
T. Robinson

GMRES and Integral Operators C. T. Kelley and Z. Q. Xue

Iterative Methods for Total Variation Denoising
C. R. Vogel and M. E. Oman

Migration of Vectorized Iterative Solvers to Distributed-Memory
Architectures Claude Pommerell and Roland Ruhl

A Simple Parallel Algorithm for Polynomial Evaluation
Lei Li, Jie Hu, and Tadao Nakamura

A Block QMR Method for Computing Multiple Simultaneous Solutions to
Complex Symmetric Systems
William E. Boyse and Andrew A. Seidl

Solving Linear Inequalities in a Least Squares Sense
R. Bramley and B. Winnicka

On the Effects of Using the Grassman-Taksar-Heyman Method in
Iterative Aggregation-Disaggregation
Tugrul Dayar and William J. Stewart

From: "Lieke v.d. Eersten-Schultze" <Lieke.Schultze@cwi.nl>
Subject: MCSS 8.1
Date: Tue, 07 Nov 1995

Contributed by Jan H. van Schuppen (J.H.van.Schuppen@cwi.nl)

Mathematics of Control, Signals, and Systems (MCSS)

TABLE OF CONTENTS
Volume 8, Issue 1

Conditions for Stability of the Extended Kalman Filter and Their
Application to the Frequency Tracking Problem
B.F. La Scala, R.R. Bitmead, and M.R. James

Neural Networks, Rational Functions, and Realization
Theory U. Helmke and R.C. Williamson

The Generic Dimension of a Minimal Realization of an AR System
J.W. van der Woude

Exponential Stability of Linear Systems with Commensurate Time-Delays
J. Kogan and A. Leizarowitz

Continuous State Representations for AR Systems H. Gluesing-Lueerssne

REMINDER
The new address for submissions is:

J.H. van Schuppen
Co-Editor MCSS
CWI
P.O. Box 94079
1090 GB Amsterdam
The Netherlands

E-mail inquires regarding submission should be addressed
to: mcss@cwi.nl.

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA Contents
Date: Mon, 6 Nov 1995

LINEAR ALGEBRA AND ITS APPLICATIONS
Contents Volume 232, January 1, 1996

A Unifying Approach to Some Old and New Theorems on Distribution and
Clustering Evgenij E. Tyrtysnikov

Approximate Linear Algebra Is Intractable

V. Kreinovich, A. V. Lakeyev, and S. I. Noskov

Flags and Equality of Tensors J. A. Dias da Silva

Circum-Euclidean Distance Matrices and Faces

P. Tarazaga, T. L. Hayden, and Jim Wells

Full Sign-Invertibility and Symplectic Matrices

David A. Schmidt and Chjan C. Lim

Generalized Continuous-Time Riccati Theory

Vlad Ionescu and Cristian Oara

An Error Bound for the SSOR and USSOR Methods

M. Madalena Martins, M. Estela Trigo, and M. Madalena Santos

A Note on the Row-Rhomboidal Form of a Matrix Miroslav Fiedler

Sylvester Matrix Equation for Matrix Pencils

Ma Asuncion Beitia and Juan-Miguel Gracia

Some Results on the Bergstrom and Minkowski Inequalities

Miroslav Fiedler and Thomas L. Markham

On the Exact p -Cyclic SSOR Convergence Domains

A. Hadjidimos, D. Noutsos, and M. Tzoumas

Sine Transform Based Preconditioners for Symmetric Toeplitz Systems

Raymond H. Chan, Michael K. Ng, and C. K. Wong

The Combinatorial Power of the Companion Matrix

William Y. C. Chen and James D. Louck

----- end -----

near model reduction Y. Favennec, M. Girault and D. Petit

IPNet Digest Volume 2, Number 12 December 31, 1995

Today's Editor: Patricia K. Lamm
Michigan State University

Today's Topics:

Happy New Year!
Table of Contents: SIAM J. on Applied Mathematics
Table of Contents: J. Mathematical Systems, Estimation, and Control
Table of Contents: Advances in Computational Mathematics
Table of Contents: Numerical Algorithms
Table of Contents: Linear Algebra and Its Applications

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
Mail to ipnet-request@math.msu.edu
<http://www.mth.msu.edu/ipnet.html>

From: thomas@siam.org
Subject: SIAP 56-1 table of contents
Date: Mon, 04 Dec 95

SIAM Journal on Applied Mathematics February 1996 Vol. 56, No. 1
Table of Contents

Numerical Study of Bifurcations by Analytic Continuation of a Function
Defined by a Power Series P. G. Drazin and Y. Tourigny

Biorthogonal Series Solution of Stokes Flow Problems in Sectorial
Regions S. A. Khuri

Maximal Effective Diffusivity for Time-Periodic Incompressible Fluid
Flows Igor Mezic, John F. Brady, and Stephen Wiggins

Notes on the Eigensystem of Magnetohydrodynamics
P. L. Roe and D. S. Balsara

Band-Gap Structure of Spectra of Periodic Dielectric and Acoustic
Media. I. Scalar Model Alex Figotin and Peter Kuchment

Dissolution Effects in Transport in Porous Media
Angela Pawell and Klaus-Dieter Krannich

A Delay Equation Representation of Pulse Circulation on a Ring in
Excitable Media Marc Courtemanche, James P. Keener, and Leon Glass

A Diffusion Model for AIDS in a Closed, Heterosexual Population:
Examining Rates of Infection Denise E. Kirschner

Pseudolocal Tomography Alexander I. Katsevich and Alexander G. Ramm

Approximate Inverse Geophysical Scattering on a Small Body
Alexander I. Katsevich and Alexander G. Ramm

Inverse Schrodinger Scattering on the Line with Partial Knowledge of the
Potential Tuncay Aktosun

An Inverse Problem for the Symmetric Tridiagonal Quadratic Pencil with Application to Damped Oscillatory Systems
Yitshak M. Ram and Sylvan Elhay

Frustration, Stability, and Delay-Induced Oscillations in a Neural Network Model
Jacques Belair, Sue Ann Campbell, and P. van den Driessche

Beyond Effective Medium Theory: Pulse Stabilization for Multimode Wave Propagation in High-Contrast Layered Media
Pawel Lewicki, Robert Burrige, and Maarten v. de Hoop

Asymptotic Expansions of Singularly Perturbed Systems Involving Rapidly Fluctuating Markov Chains
R. Z. Khasminskii, G. Yin, and Q. Zhang

Affine Invariant Segmentation by Variational Method
C. Ballester, V. Caselles, and M. Gonzalez

From: hyman@birkhauser.com (Elizabeth Hyman)
Subject: JMSEC 6:1, 1996
Date: Fri, 8 Dec 1995

Submitted by Edwin F. Beschler:

Journal of Mathematical Systems, Estimation, and Control Vol. 6, No. 1
Table of Contents

On the Nonlinear Dynamic Disturbance Decoupling Problem
Paulo Sergio Pereira da Silva

Extended Controller Form and Invariants of Nonlinear Control Systems with a Single Input Wei Kang

Fixed Gain Off-line Estimators of ARMA Parameters Laszlo Gerencser

The Multivariable Parabola Criterion for Robust Controller Synthesis: A Riccati Equation Approach Wassim M. Haddad and Dennis S. Bernstein

Summary: Asymptotic Stabilization of a Class of Three Dimensional Homogeneous Control Systems Sandra Lee Samelson

Summary: Viscosity Solutions of Hamilton-Jacobi Equations Arising in Nonlinear H^* -Control Joseph A. Ball and J. William Helton

Summary: Versions of Sontag's Input to State Stability Condition and Output Feedback Global Stabilization J. Tsinias

Summary: Error Estimates for Distributed Parameter Identification in Linear Elliptic Equations Tommi Karkkainen

Summary: Well-Posedness and Stability Analysis of Hybrid Feedback Systems Piotr Grabowski

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: ADVANCES IN COMPUTATIONAL MATHEMATICS - CONTENTS
Date: Mon, 4 Dec 1995

Advances in Computational Mathematics, Vol. 4, No. III 1995, ISSN 1019
7168

Table of Contents

Editors-in-Chief: John C. Mason & Charles A. Micchelli

Advances in Computational Mathematics is an interdisciplinary journal of high quality, driven by the computational revolution and emphasising innovation, application and practicality. This journal is of interest to a wide audience of mathematicians, scientists and engineers concerned with the development of mathematical principles and practical issues in computational mathematics.

On multivariate Hermite interpolation T. Sauer and Y. Yu

Convergence estimates for the wavelet-Galerkin method: superconvergence
at the node points S. M. Gomes

Compactly supported positive definite radial functions Z. Wu

Submissions of articles and proposals for special issues are to be
addressed to the Editors-in-Chief:

John C. Mason
School of Computing and Mathematics, University of Huddersfield,
Queensgate, Huddersfield, HD1 3DH, United Kingdom
E-mail: j.c.mason@hud.ac.uk

or

Charles A. Micchelli
Mathematical Sciences Department
IBM Research Center
P.O. Box 218, Yorktown Heights, NY 10598, USA E-mail: cam@yktvmz.bitnet

Requests for FREE SPECIMEN copies and orders for Advances in
Computational
Mathematics are to be sent to: E-mail: publish@baltzer.nl or see our
homepage at <http://www.NL.net/~baltzer/>

From: publish@baltzer.nl (Baltzer Science Publishers)
Subject: NUMERICAL ALGORITHMS - CONTENTS
Date: Thu, 7 Dec 1995

Numerical Algorithms, Volume 10, No. 3-4 1995, ISSN 1017 1398
Table of Contents

Editor-in-Chief: Claude Brezinski

Numerical Algorithms is a primary journal covering all aspects of
numerical algorithms: theoretical results, implementation, numerical
stability, complexity, subroutines and applications.

Maintaining convergence properties of BiCGstab methods in finite
precision arithmetic G.L.G. Sleijpen and H.A. van der Vorst

Stability analysis of a general Toeplitz systems solver
A.W. Bojanczyk, R.P. Brent and F.R. de Hoog

Multistep methods for differential algebraic equation X. Yan

Using Markov's interval arithmetic to evaluate Bessel-Ricatti functions
M.C. Bartholomew-Biggs and S. Zakovic

Formal orthogonal polynomials and Hankel/Toeplitz duality
A. Bultheel and M. Van Barel

Quasipower and hypergeometric series -- construction and evaluation
S. Paszkowski

Homotopy method for the numerical solution of the eigenvalue problem of
self-adjoint partial differential operators S.H. Lui and G.H. Golub

The design of a parallel dense linear algebra software library:
Reduction to Hessenberg, tridiagonal, and bidiagonal form
J. Choi, J.J. Dongarra and D.W. Walker

Convolution kernels based on thin-plate splines J. Levesley

Erratum to ``Application of special reduction procedures to metrological
data'' P. Ciarlini and F. Pavese,

Book reviews
Author Index

Submissions of articles and proposals for special issues are to be
addressed to the Editor-in-Chief:

Claude Brezinski
Laboratoire d'Analyse Numerique et d'Optimisation
UFR IEEA - M3
Universite des Sciences et Technologies de Lille
59655 Villeneuve d'Ascq Cedex
France
E-mail: brezinsk@omega.univ-lille1.fr

postal address:
Paris Drouot BP 18
75433 Paris Cedex 09
France

Requests for FREE SPECIMEN copies and orders for Numerical Algorithms
are to be sent to: E-mail: publish@baltzer.nl or see our homepage at
<http://www.NL.net/~baltzer/>

From: Richard Brualdi <brualdi@math.wisc.edu>
Subject: LAA CONTENTS, VOL 233
Date: Mon, 4 Dec 1995

LINEAR ALGEBRA AND ITS APPLICATIONS Volume 233, January 15, 1996
Table of Contents

Call for Challenges in Matrix Theory

Structure of Algebras of Commutative Matrices
Roberto Bevilacqua and Paolo Zellini

On Products of Unbounded Collections of Matrices
M. A. Dehghan and M. Radjabalipour

Recursive Solution of Loewner-Vandermonde Systems of Equations. I
Karla Rost and Zdenek Vavrin

A Note on Comparison Theorems for Splittings and Multisplittings
of Hermitian Positive Definite Matrices Reinhard Nabben

Nonnegative Alternating Circulants Leading to M-Matrix Group Inverses
Yonghong Chen, Stephen J. Kirkland, and Michael Neumann

Products of Similar Matrices Frieder Knuppel

Criteria for Sufficient Matrices H. Valiaho

Brunovsky's Canonical Form for Linear Dynamical Systems over Commutative
Rings
Jose A. Hermida-Alonso, M. Pilar Perez, and Tomas Sanchez-Giralda

On Non- $\{0, 1/2, 1\}$ Extreme Points of the Generalized
Transitive Tournament Polytope Zeev Nutov and Michal Penn

Dupliquee d'Une Train Algebre et d'Une Algebre de Bernstein Periodique
Richard Varro

On Convertible Complex Matrices
Suk-Geun Hwang, Si-Ju Kim, and Seok-Zun Song

On Upper Triangular Block Weak Regular Splittings of a Singular M-Matrix
Wen Li and Mou-Cheng Zhang

A Result on Exponents of Finite-Dimensional Simple Lie Algebras and Its
Application to Kac-Moody Algebras Hans Gradl

The Hyperpower Iteration Revisited Chen Xu-Zhou and Robert E. Hartwig

The Similarity Class of a Matrix Shu-An Hu and Eugene Spiegel

Second Order Bernstein Algebras of Dimension 4
S. Gonzalez, J. C. Gutierrez, and C. Martinez

LINEAR ALGEBRA AND ITS APPLICATIONS Volume 234, February 1996
Table of Contents

Truncation of Wavelet Matrices: Edge Effects and the Reduction of
Topological Control Michael H. Freedman and William H. Press

The Methods of Vorobyev and Lanczos C. Brezinski

Computing the Joint Spectral Radius Gustaf Gripenberg

Primitivity of Generalized Circulant Boolean Matrices
Yi-Jia Tan and Mou-Cheng Zhang

Perturbation Theory for Orthogonal Projection Methods With Applications

to Least Squares and Total Least Squares
Ricardo D. Fierro and James R. Bunch

A Canonical Form for Pencils of Matrices With Applications to Asymptotic
Linear Programs Ying Huang

p-Groups in the Betti-Mathieu Group Hong Goo Park

Self-Scaling Fast Rotations for Stiff and Equality-Constrained Linear
Least Squares Problems Andrew A. Anda and Haesun Park

Computing the Numerical Radius G. A. Watson

Diagonal Matrix Scaling is NP-Hard Leonid Khachiyan

Criteria for Vanishing of Eulerian Polynomials on $n \times n$ Matrices
M. Domokos

The Matrix Equation $AXB - GXD = E$ Over the Quaternion Field Huang Liping

Matrix Description of Multivariable Polynomials Krzysztof Galkowski

On the Two-Block H_∞ Problem for a Class of Unstable Distributed
Systems Caixing Gu, Onur Toker, and Hitay Ozbay

On Bordering of Regular Matrices
K. Manjunatha Prasad and K. P. S. Bhaskara Rao

Optimization of Functions of Matrices With an Application in Statistics
Jean-Daniel Rolfe

----- end -----