Sunday 4-6 pm *Erik Goodman:* **TUTORIAL ON GENETIC ALGORITHMS** Room 103 Kellogg Center

MONDAY, 11 JUNE 2007

8:00 BREAKFAST

Session 1

8:30 **Greetings** *TBD*
8:40 **Overview of Computational Model Validation and its Relationship to Inverse Problems** *K Dowding*
9:10 **Concepts and Insights from Filter Coefficients for the Inverse Heat Conduction Problem** *JV Beck*
9:28 **Fractional Diffusion Equations (29-776) On the Stable Numerical Computation of Grunwald-Letnikov Fraction Derivatives** *D Murio*
9:46 **Use of Evolutionary Algorithms to Determine Tool Heat Fluxes In a Machining Operation** *K Woodbury, S Duvvuri, YK Chou, J Liu*
10:04 BREAK

Session 2

10:30 **Local Regularization for the Nonlinear Inverse Autoconvolution Problem** *Z Dai, PK Lamm*
10:48 **Convergence rates for Tikhonov regularization of nonlinear ill-posed problems based on distance functions** *M Schieck, B Hofmann, SV Pereverzev*
11:06 **Geostatistical inverse modeling: Constraining estimation using spatial and temporal autocorrelation** *AM Michalak*
11:24 **Energy-Based Estimation of Damping Parameters in Multi-Degree-of-Freedom Vibration Systems (36-692)** *B Feeny*
11:42 **Local Pailey Wiener Theorems** *SB Damelin, T Devaney*
12:00 LUNCH

Session 3

13:30 **Fully Coupled Multilevel Domain Decomposition Methods for Inverse Elliptic Problems** *X-C Cai*
13:48 **A Discrepancy Principle for Local Regularization of Inverse Problems** *C Brooks, PK Lamm*
14:06 **Implementation of a Versatile Two-Stage Inverse Solution Method Using Non-Linear Image Data** *EM Meacham, JF Doyle*
14:24 **A Bayesian Technique for Solving Electromagnetic NDE Inverse Problems** *P Ramuhalli TM Khan*
14:42 **Parameter Estimation Analysis of Diffusion-Weighted MRI Protocols Used for Soft Tissue Fiber Reconstruction** *G Raguin, S Majumdar, SS Udpa*
15:00 BREAK

Session 4

15:30 **Iterative Inversion Technique for Electromagnetic NDE Using State Space Representation for Cracks** *L Udpa, X Liu , Y Deng, Z Zeng, JS Knopp*
15:48 **A Hybrid Approach with Artificial Neural Networks, Levenberg-Marquardt and Simulated Annealing Methods for the Solution of Drying Inverse Problems** *J Lugon Jr., AJ Silva Neto*
16:06 **Thermal & Optical Property Estimation** *DC Knupp, WF Sacco, LA Ratamero, N Cella, L Biondi Neto AJ Silva Neto*
16:24 **Local Regularization Methods for Nonlinear Volterra Integral Equations of Hammerstein Type** *X Luo, PK Lamm*
16:42 **A Decomposition Method for Estimating Modal Parameters** *U Farooq, B Feeny*

19:00 **SYMPOSIUM BANQUET – KELLOGG CENTER**

Session 5

8:00 BREAKFAST

8:30 **Inverse mass convection using an experimentally identified reduced model – case of a transient pollutant source in a turbulent air flow** *D. Maillet M. Girault, F. Bonthoux , P. Martin, R. Braconnier, J. R. Fontaine*

8:48 **Sensitivity analysis and identification of a Bouc-Wen model for magneto-rheological dampers (32-911)** *L Stutz, RA Tenenbaum, AJ Silva Neto*

9:06 **Multidimensional Inverse Heat Conduction Calculations** *H-J Reinhardt, J Frohne, FT Suttmeier, NH Dinh*

9:24 **Numerical Experiments for Estimation of Dynamic Properties of Polymers with Instrumented Nanoindentation** *KD Cole, JA Turner, B Polly*

9:42 **Fractional diffusion: A new paradigm** *MM Meerschaert*

10:00 BREAK

Session 6

10:30 **Time Fractional Inverse Heat Conduction Problem** *D Murio*

10:48 **Inverse Kernels for the Time Fractional Inverse Heat Conduction Problem** *D Murio*

11:06 **Inverse Determination of Wall Temperature in Inverse Solution for Ducts with Thermal Boundary Conditions of the H1 Type** *A Haji-Sheikh, JV Beck*

11:24 **Inverse Problems in Pricing Financial Derivatives and Their Regularization for the American Option Case** *A Niestrawski, R Melnik*

11:42 **Ill-posedness and regularization of an inverse problem of volatility identification** *B Hofmann*

12:00 LUNCH

Session 7

13:30 **Heat Flux Measurements In Rocket Launch Accidents** *N.R. Keltner, H. Noravian, K. Woodbury, A. B. Donaldson, W. Bonahoom*

13:48 **Criterion based optimal design of isotope feeding experiments** *Igor Libourel D. K. Allen, J. B. Ohlrogge, Y. Shachar-Hill*

14:06 **Nonlinear Method to Estimate Thermal Kinetic Parameters for Degradation of Anthocyanins in Grape Pomace** *DK Mishra, KD Dolan, L Yang*

14:24 **Formulation and Solution of Gas-liquid Adsorption Inverse Problem To Using a Hybrid Combination of Stochastic and Deterministic Methods** *J Lugon, Jr., CC Santana, AJ Silva Neto*

14:42 **Solution of an Inverse Problem in Chromatography with the Generalized Extremal Optimization Algorithm & AFM Image Restoration with Prior Knowledge of the Blurring Operator** *AP Cuco, LF Lage, LD. Camara, HG Stutz, GA Cidade, NC Roberty, AJ Silva Neto*

15:00 BREAK

Session 8

15:20 **A Parameter Estimation Method for the Flexural Wave Properties of a Beam** *AJ Hull, DA Hurdis*

15:38 **Material Parameter Optimization** *M Rademacher, R Sidhu, R Averill*

15:56 **Inverse Problems in Aeroacoustics** *M Zhuang, C. Yu, Z. Zhou*

16:14 **Application of Geostatistical Inverse Modeling to Satellite Remote Sensing Data** *T Erickson, AM Michalak*

16:32 **An Analytical Inverse Method for Determination of Thick Plate Dilatational Wavespeed** *C Radcliffe, G. Garland, A. Hull*

16:50 **Closing Comments and Announcement of ICIPE 6**