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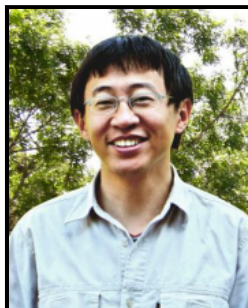| Home | About ▼ | Focus Areas ▼ | Research ▼ | Divisions ▼ | Programs ▼ | News ▼ | Events ▼ | Computing Resources ▼ | Jobs | Contact Us | Log In | LSU ▼ |

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Special Guest Lectures

Recent Advances in Box Constrained Optimization

Hongchao Zhang, University of Minnesota

Postdoctoral Researcher for the Institute for Mathematics and its Applications (IMA)

Johnston Hall 338
January 15, 2008 - 03:30 pm

Abstract:
This talk focuses on large-scale optimization algorithms for box constraint optimization. Such problems arise in various fields including optimal control, variational inequalities, multiplier methods as well as in many real applications. In this talk, an overview of recent developments on both theoretical and computational results in this field is given. In particular, a new active set algorithm (ASA) with strong local and global convergence properties is introduced. In addition, a brief review of the nonlinear conjugate gradient methods is also included. An implementation of ASA based on the recent conjugate gradient algorithm CG_DESCENT and a cyclic Barzilai-Borwein algorithm is given. Numerical experiments are presented using box constrained problems in the CUTEr and MINPACK-2 test problem libraries.

Speaker's Bio:
Hongchao Zhang is currently a Post-Doctoral Fellow at the Institute for Mathematics and its Applications (IMA) at University of Minnesota and IBM TJ Watson Research Center . He received his Ph.D. in the Department of Mathematics at the University of Florida, with Professor W. Hager in 2006 and my M.Sc. in the Academy of Mathematics and System Science (AMSS), Chinese Academy of Sciences in 2001, supervised by professor Y.Yuan. His research interest include 1) Nonlinear Programming and its Applications, 2) Mixed Integer Nonlinear Programming, 3) Sparse Matrix Computing, Graph Partitioning, 4) Inverse Problems in Medical Imaging and Petrophysics, and 5) Derivative Free Optimization.