

**The Fourth International Conference on  
Complementarity Problems**

**Dedicated to the Memory of  
Carlton E. Lemke and George B. Dantzig**

Stanford University

August 9–12, 2005

**SCHEDULE OF TALKS**

## **Program Committee**

Michael C. Ferris, *University of Wisconsin, Madison*  
Jong-Shi Pang (Chair), *Rensselaer Polytechnic Institute*  
Daniel Ralph, *University of Cambridge*  
Stefan Scholtes, *University of Cambridge*

## **Organization**

Bridget A. Beelen, *Rensselaer Polytechnic Institute*  
Lex Buntin, *Stanford University*  
Richard W. Cottle, *Stanford University*  
Yvonne Hankins, *Stanford University*  
Tim Keely, *Stanford University*  
Che-Lin Su, *Stanford University*

## Tuesday August 09, 2005

07:45 A.M. Registration  
08:15–08:30 Opening and welcome

TuM1 **Chair: Richard Cottle**

08:30–09:00 **Roger Wets** On the stability of equilibrium points  
09:00–09:30 **Jeffrey Trinkle** Connections between dynamic and quasistatic models  
Steve Berard of multi-rigid-body systems with unilateral contacts  
Bharath Mukundakrishnan  
Vijay Kumar  
Guanfeng Liu  
Jong-Shi Pang  
Peng Song

09:30–10:00 **Kenneth Judd** Optimal income taxation with multidimensional  
Che-Lin Su taxpayer types

10:00–10:30 **morning break**

TuM2 **Chair: Jong-Shi Pang**

10:30–11:00 **Hans Schumacher** Dynamics of equilibria  
11:00–11:30 **Jinglai Shen** Non-Zenoness, observability, and stability of  
Kanat Çamlıbel complementarity systems  
Jong-Shi Pang

11:30–12:00 **Monica-Gabriela Cojocaru** Recent advances in the theory of projected dynamical  
systems (PDS)

12:00–12:30 **Kanat Çamlıbel** On the directional differentiability of trajectories of  
complementarity systems

12:30–14:00 **lunch break**

TuA1 **Chair: Roger Wets**

14:00–14:30 **Todd Munson** The price is right  
Sven Leyffer

14:30–15:00 **Georgia Perakis** Oligopoly competition: Bertrand versus Cournot  
Amr Farahat

15:00–15:30 **Sven Leyffer** Solving multi-leader-follower games  
Todd Munson

15:30–16:00 **Ramesh Johari** A game theoretic view of efficiency loss in resource  
Shie Mannor allocation  
John Tsitsiklis

16:00–16:30 **afternoon break**

TuA2 **Chair: Stephen Wright**

16:30–17:00 **Seetharama Gowda** The Q-property of composite transformation and the  
P-property of Stein-type transformations on self-dual  
and symmetric cones

17:00–17:30 **Uwe Schaefer** Linear systems of interval equations and the LCP  
17:30–18:00 **Defeng Sun** A dual optimization approach for inverse quadratic  
Zheng-Jian Bai eigenvalueproblems with partial eigenstructure  
Delin Chu

## Wednesday August 10, 2005

### WeM1

Chair: **Patrice Marcotte**

- 08:30–09:00 **Xuegang Ban** Decomposition and synchronization schemes for solving asymmetric user equilibrium  
Michael Ferris  
Henry Liu
- 09:00–09:30 **Lisa Fleischer** Tolls for heterogeneous, selfish users of a multicommodity network and generalized congestion games  
Kamal Jain  
Mohammad Mahdian
- 09:30–10:00 **Shu Lu** Sensitivity of static traffic user equilibria  
Stephen Robinson

10:00–10:30 **morning break**

### WeM2

Chair: **Yves Smeers**

- 10:30–11:00 **Terry Friesz** Dynamic oligopolistic electric power network competition with ramping costs and joint constraints  
Reetabrata Mookherjee  
Matthew Rigdon  
Benjamin Hobbs
- 11:00–11:30 **Andreas Ehrenmann** A comparison of electricity market designs in networks  
Karsten Neuhoff
- 11:30–12:00 **Robert Entriken** Optimizing energy bids for a single supplier in a spot electricity market  
John Stone  
Steve Wan
- 12:00–12:30 **Andrew Liu** Collusive games in transmission-constrained electricity markets  
Joseph Harrington  
Benjamin Hobbs  
Jong-Shi Pang

12:30–14:00 **lunch break**

### WeA1

Chair: **Danny Ralph**

- 14:00–14:30 **Stephen Wright** Convergence of nonlinear programming formulations of MPECs  
Mihai Anitescu  
Danny Ralph  
Paul Tseng
- 14:30–15:00 **Hande Benson** Interior-point algorithms, penalty methods and equilibrium problems  
Arun Sen  
David Shanno  
Robert Vanderbei
- 15:00–15:30 **Gabriel Lopez-Calva** Regularization via penalty methods
- 15:30–16:00 **Andreas Fischer** Convergence results for Levenberg-Marquardt type algorithms

16:00–16:30 **afternoon break**

### WeA2

Chair: **Curtis Eaves**

- 16:30–17:00 **Ilan Adler** Sufficient matrices belong to L  
Richard Cottle  
Sushil Verma
- 17:00–17:30 **Michael Ferris** Some computational legacies of Lemke and Dantzig in complementarity

17:30–19:00 **break**

19:00–22:00 **conference banquet**

## Thursday August 11, 2005

ThM1 **Chair: Robert Entriken**

08:30–09:00 **Shmuel Oren** An EPEC algorithm for a two-settlement electricity market equilibrium model  
Jian Yao  
Ilan Adler

09:00–09:30 **Yves Smeers** The role of long-term contracts for strategic investment decisions in oligopolistic electricity markets  
Andreas Ehrenmann

09:30–10:00 **Group Photo Session** At steps leading to Quadrangle

10:00–10:30 **morning break**

ThM2 **Chair: Michael Ferris**

10:30–11:00 **Michael Ulbrich** Recent approaches to complementarity in function spaces

11:00–11:30 **Martin Weiser** Control induced interior point methods in function space

11:30–12:00 **Stefan Ulbrich** Primal-dual interior point multigrid methods for complementarity problems in function space with applications to PDE-constrained optimization

12:00–12:30 **Michael Hintermüller** Complementarity emerges in imaging

12:30–14:00 **lunch break**

ThA1 **Chair: Stephen Robinson**

14:00–14:30 **Thomas F. Rutherford** Self-Enforcing Agreements and International Trade in Greenhouse Gas Emission Rights

14:30–15:00 **Huifu Xu** Convergence analysis of sample average approximation methods for a class of stochastic mathematical programs with equality constraints  
Fanwen Meng

15:00–15:30 **Houyuan Jiang** Stochastic approximation approaches to the stochastic variational inequality problem  
Huifu Xu

15:30–16:00 **Gül Gürkan** Solving stochastic mathematical programs with complementarity constraints using simulation  
Birbil Ilker  
Listes Ovidiu

16:00–16:30 **afternoon break**

ThA2 **Chair: Jinglai Shen**

16:30–17:00 **Mihai Anitescu** Complementarity-based multi-rigid-body dynamics simulation

17:00–17:30 **Dinesh Pai** Quasi-rigid contact with friction

17:30–18:00 **David Stewart** Impact problems for elastic bodies

**Friday August 12, 2005**

FrM1 **Chair: Thomas Rutherford**

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|-------------|--|--|
| 08:00–08:30 | <b>Robert Wilson</b><br>Srihari Govindan | A decomposition algorithm for N-player games       |
| 08:30–09:00 | <b>Karl Schmedders</b><br>Kenneth Judd   | Finding all equilibria in static and dynamic games |
| 09:00–09:30 | <b>Che-Lin Su</b><br>Kenneth Judd        | MPEC approaches to moral-hazard problems           |
| 09:30–10:00 | <b>Alejandro Jofré</b>                   | Equilibrium analysis for a network market model    |
| 10:00–10:30 | <b>morning break</b>                     |  |

FrM2 **Chair: Jong-Shi Pang**

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| 10:30–11:00 | <b>Patrice Marcotte</b><br>Daoli Zhu | Two problems involving a bi-criterion network equilibrium model |
| 11:00–11:30 | <b>Siriphong Lawphongpanich</b>      | On the minimum toll booth problem                               |
| 11:30 P.M.  | closing                              |   |