SEMINAR IN

OPTIMIZATION AND SYSTEMS ENGINEERING

November 3rd 2010

Åbo Akademi University
THE OSE RESEARCH GROUP

- The Optimization and Systems Engineering (OSE) group at Åbo Akademi University is an interdisciplinary research group focusing on theory, methods and algorithms in systems engineering, optimization and statistics, as well as their applications in science and engineering.

- OSE bridges the systems engineering, systems theory and mathematical disciplines at ÅAU.

- The group was appointed a Center of Excellence within research at the university for the time-period 2010-2014.
Currently the research group consists of about 25 PhD students and post doctoral researchers.
STRUCTURE OF THE OSE RESEARCH

- Theory & Methods
  - Systems Theory
  - Mathematical Statistics
- Optimization
- Systems Engineering
  - Large scale scheduling
  - Time-periodic systems
  - Peptide docking
  - Systems biology
  - Statistical methods in medicine
- Physics and Material Science
  - Minimization of energy in electron configurations
- Engineering
- Biotechnology and Medicine
- Applications in Science & Engineering
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<td>Professor Tapio Westerlund</td>
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<td>Deterministic Global Optimization: Advances in Theory and Applications</td>
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<td>De Novo Design of Proteins and Protein-Peptide Complexes: Advances and Challenges</td>
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<td>An overview of the state/signal approach to infinite-dimensional systems theory</td>
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<td>Three applications of semidefinite programming for 0-1 quadratic programs</td>
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<td>Mikael Nyberg, PhD student:</td>
<td>Modeling a complex production process using a State-Task-Network formulation</td>
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WORDS OF WELCOME

RECTOR JORMA MATTINEN
ÅBO AKADEMI UNIVERSITY
Professor of Chemical and Biological Engineering at Princeton University since 1994
Awarded the Stephen C. Macaleer '63 Professorship in Engineering and Applied Science in 2007

Author of the textbooks
- Nonlinear and Mixed-Integer Optimization (Oxford University Press, 1995)

Co-editor of several monographs/books and is the chief co-editor of the Encyclopedia of Optimization (Kluwer Academic Publishers, 2001; Springer, 2008)
Has over 230 refereed journal publications in the area of global optimization and have given over 320 invited lectures and seminars

“Research interests lie at the interface of chemical engineering, applied mathematics, and operations research.”
SEMINAR PROGRAM

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   Chairman of the OSE group
   Opening statement

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   Complexes: Advances and Challenges

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