



## Operations Research Seminar

# Analysis, Controllability and Optimization of Time-Discrete Systems and Dynamical Games within Intelligent Networks and Security Structures

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**Date: Thursday, May 1, 2008**  
**Time: 15:00-16:00**  
**Location: Glasgow 115**

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In the first part of the talk the research profile of the COMTESSA working group of Dr. Pickl (Visiting Professor at NPS) is presented. He establishes the research projects INESS (Intelligent Networks and Security Structures) and CRISYS (Critical Infrastructures and System Analysis). In general, the study and analysis of international (resource) conflicts become more and more important. The question arises if a strategic management or process optimization can help to solve these global conflicts or might initiate to facilitate their treatment. In this contribution we will discuss in which way an extension of a certain time-discrete model can be used to solve general multilayered conflicts. Originally, it was introduced to deal with the special Kyoto conflict. The introduction summarizes this (Modelling/Simulation and Optimization-) approach. Two algorithmic solutions which exploit a special underlying combinatorial structure are presented. An extension of the relevant parameter towards general effectivity measures leads to a model of general intelligent networks and security structures.

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**Bio:** studied mathematics, electrical engineering, and philosophy at TU Darmstadt and EPFL Lausanne 1987-93. Dipl.-Ing. '93, Doctorate 1998 with award. Assistant Professor at Cologne University (Dr. habil. 2005; *venia legendi* "Mathematics"). Visiting Professor at University of New Mexico (U.S.A.), University Graz (Austria), University of California at Berkeley). Visiting scientist at SANDIA, Los Alamos National Lab, Santa Fe Institute for Complex Systems and MIT. Associated with Centre for the Advanced Study of Algorithms (USA), vice-chair of EURO group "Experimental OR", Program for Highly Gifted Pupils, Research Program "Intelligent Networks and Security Structures" (INESS), International Best Paper Awards '03, '05, '07. Foundation of COMTESSA (Competence Center for Operations Research Management Intelligent Engineered Systems and Algorithms).