Workshop On Game Theory
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Institute of Applied Mathematics, Middle East Technical University
Ankara, Turkiye

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Workshop on Game Theory organized by Applied Mathematics in Life and Human Sciences and Economy Group

January 30, 2009, Friday 14:30

Speaker 1: Rodica Branzei

Peer Group Situations and Games

Speaker 2: Stef Tijs

Approximate Solutions for Multi-Criteria Situations via Improvement Sets

Rodica Branzei

Peer Group Situations and Games

In this talk we focus on cooperative games that arise when studying cooperative behavior in economic situations where the social configuration of the organization influences the potential economic possibilities of all groups of agents. The important group for an agent in such situations is that consisting of the leader, the agent himself/herself and all the intermediate agents that exist in the given hierarchy between the agent and the leader, because only by this cooperation the agent's potential economic possibilities can become effective. We call such a group of agents a peer group. Peer group situations are introduced as triplets consisting of the set of agents involved, the peer group structure describing the organization's social configuration and a real-valued vector that gives the potential individual economic possibilities of the agents. We also consider interval uncertainty in payoffs in peer group situations. Our game theoretical approach is based on peer groups of agents and on an integrative view of the economic possibilities and the organization structure. We study properties of (interval) peer group games and related solutions, and present several applications.

Stef Tijs

Approximate Solutions for Multi-Criteria Situations via Improvement Sets

Improvement sets are upper-comprehensive sets not containing the origin. Based of them we can define approximate solutions for multi-criteria optimization and conflict situations. We compare these solutions with Pareto solutions etc. and give an existence theorem.