

VORtrräge zum Operations Research

Kolloquium des Instituts für Operations Research

- Zeit:* Montag, 14. Juli 2025, 15:45-16:45 Uhr
- Ort:* **Gebäude 09.21, Raum 320**
- Es spricht:* Prof. Dr. Semu Kassa, Botswana International University of Science and Technology
- Zum Thema:* **Hierarchical Multi-Agent Games and Some Applications**

Decision making can be difficult when there are many actors (or agents) who may be coordinating or competing to achieve their various ideas of the optimum outcome. Hierarchical multi-agent systems (HMAS) are decentralized decision systems, where agents are organized into sequential or layered structures to coordinate complex tasks. In such systems, higher-level agents manage broader goals and delegate subtasks to lower-level agents, creating a tree-like hierarchy. Multiplayer hierarchical decision-making problems are usually considered as games. Such games serve as an important model structure in game theory to address compromises among multiple interacting decision units within a hierarchical system where multiple decision agents are involved at each level of the hierarchy. Problems of such nature arise in a variety of contexts in business and economics, engineering, cyber or traditional defence systems, control of unmanned vehicles, and other fields and are of great importance in strategic decision making. Multiplayer games have always been the research focus of decision and control fields. In this talk, we will consider different forms of MLMF games with their use in diverse application areas. Moreover, we will also address the two components of their solution structure: (1) Obtaining an optimal strategy, when the decisions are required to be made sequentially, and (2) Finding optimal equilibrium solution when multiple agents decide simultaneously at any of the hierarchical levels of the sequence of decisions.

Die Vorträge zum Operations Research wenden sich an alle Interessierten!

Bei Rückfragen wenden Sie sich bitte an:
Prof. Dr. Oliver Stein, Institut für Operations Research