

Kolloquium

**am Dienstag, 17.10.2023, 17:00 Uhr
im Hörsaal 11, FIM,
Innstr. 33
der Universität Passau**

**auf Einladung von Prof. Dr. Tobias Harks
zum Vortrag von**

Prof. Dr. Oliver Stein

Institute for Operations Research (IOR),
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mit dem Titel:

**A branch-and-bound algorithm for
non-convex Nash equilibrium problems**

Abstract:

We present the first spatial branch-and-bound method for the computation of the set of all epsilon-Nash equilibria of continuous box-constrained non-convex Nash equilibrium problems with an approximation guarantee. Thereby, the existence of epsilon-Nash equilibria is not assumed, but the algorithm is also able to detect their absence. After a brief introduction to branch-and-bound ideas in global optimization, we explain appropriate discarding and fathoming techniques for Nash equilibrium problems, formulate convergence results for the proposed algorithm, and report our computational experience.