Universität Konstanz

Fachbereich Mathematik und Statistik

Prof. Dr. S. Volkwein,

Wir laden recht herzlich zu einem Vortrag im Rahmen des

Oberseminars Numerische Optimierung

ein:

Prof. Dr. Mirjam Dür

(Universität Augsburg)

Factorization of Completely Positive Matrizes

Dienstag, 18. Mai 2021

Beginn: **16:00 Uhr**
Raum: **Zoom Room: https://zoom.us/j/99085685058?pwd=bEZrV0FoaDdFVHdCOFRZOUNBeHVzQT09**
Interessenten sind herzlich willkommen!

S. Volkwein

Abstract:

A matrix A is called completely positive, if there exists an entrywise nonnegative matrix B such that $A = BB^T$. These matrices play a major role in combinatorial and quadratic optimization.

In this talk we study the problem of finding a nonnegative factorization BB^T of a given completly positive matrix A. We formulate this factorization problem as a nonconvex feasibility problem and develop a solution method based on alternating projections. A local convergence result can be shown for this algorithm. We also provide a heuristic extension which improves the numerical performance of the algorithm. Extensive numerical tests show that the factorization method is very fast in most of the test instances.

Joint work with Patrick Groetzner.

(eingeladen von Prof. Dr. Stefan Volkwein)