Kolloquium Angewandte Mathematik
Prof. Thomas Apel (BAU1)
Prof. Matthias Gerdts (LRT1)
Prof. Markus Klein (LRT1)

Universität der Bundeswehr München

Vortragsankündigung

Am **Donnerstag, den 26.10.2023,** hält **um 15:00 Uhr**

Dr. Hoa Bui
(Curtin University, Perth)

einen Vortrag über das Thema

Cutting Plane Algorithms are Exact for Euclidean Max-Sum Problems

Der Vortrag findet im **Raum 1401** in **Gebäude 33** statt.

Vortragszusammenfassung

This talk studies binary quadratic programs in which the objective is defined by a Euclidean distance matrix, subject to a general polyhedral constraint set. This class of nonconcave maximisation problems includes the capacitated, generalised and bi-level diversity problems as special cases. We introduce two exact cutting plane algorithms to solve this class of optimisation problems. The new algorithms remove the need for a concave reformulation, which is known to significantly slow down convergence. We establish exactness of the new algorithms by examining the concavity of the quadratic objective in a given direction, a concept we refer to as directional concavity. Numerical results show that the algorithms outperform other exact methods for benchmark diversity problems (capacitated, generalised and bi-level), and can easily solve problems of up to three thousand variables.

Bio

Hoa Bui is an applied mathematician. Her major fields are variational analysis and non-smooth and non-convex optimisation. Besides optimisation, she is also working on combinatorial graphs theory and convex analysis. Her main target is to improve cutting-edge algorithms in solving big-data optimisation problems. She obtained her B.Sc. (in Mathematics) from Ho Chi Minh city, University of Pedagogy, Vietnam in 2016. Soon after her graduation, she moved to Australia to pursue her higher education in Mathematics at Federation University. She is now a research associate at Curtin University and research fellow at the Centre for Transforming Maintenance Through Data Science.

Alle Interessierten sind dazu herzlich eingeladen.