PARIS
LODRON
UNIVERSITÄT
SALZBURG

SALZBURG MATHEMATICS COLLOQUIUM
Summer 2024

Alexander Martin (Nürnberg)

„Mixed Integer Optimization Problems on Networks with PDE Constraints"

June 27, 2024

Abstract:

Motivated by challenging questions in the transformation and control of our energy system we study mixed integer optimization problems on networks with PDE constraints. Control decisions are typically modeled by integer optimization methods, while the physical behavior of water, gas and hydrogen is represented in a continuous nonlinear way, e.g. by partial differential equations (PDEs).

The topic of this talk is to discuss mathematical approaches and insights for the efficient coupling of integer and continuous nonlinear optimization in this context. We will also demonstrate the numerical success using examples from gas network optimization within the framework of the SFB/TRR154.

Thursday, **15:00-15:45**
Hörsaal 414, 1. Stock