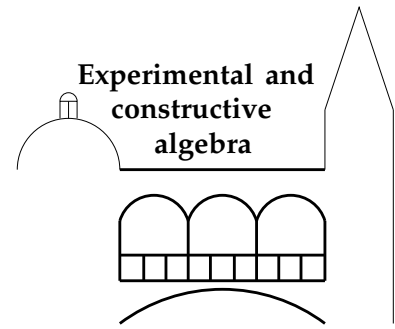


Graduiertenkolleg

Experimentelle und konstruktive Algebra



Vortrag

Donnerstag, 18. Juli 2019, 11:00 Uhr, Seminarraum Lehrstuhl D (Raum 103)

**NIDHI KAIHNSA (MAX PLANCK INSTITUTE FOR MATHEMATICS IN THE SCIENCES,
LEIPZIG):**

Chemistry and Convexity

We present a mathematical definition for the attainable region of a dynamical system, with primary focus on mass action kinetics for chemical reactions. We characterise this region for linear dynamical systems. We discuss the convex hulls of trajectories of polynomial dynamical systems. Such trajectories also include real algebraic curves. The boundaries of the resulting convex bodies are stratified into families of faces. We approximate these convex hulls by a family of polytopes. We present numerical algorithms to identify the patches of the convex hull by classifying the facets of the polytope. This talk is based on the papers

- 1) Attainable Regions of Dynamical Systems,
- 2) Computing Convex Hulls of Trajectories - joint with Daniel Ciripoi, Andreas Löhne and Bernd Sturmfels.

Wir laden alle Interessierten herzlich ein.