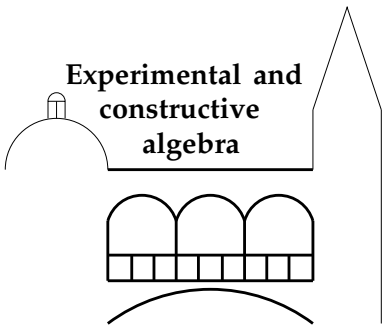
Graduiertenkolleg

Experimentelle und konstruktive Algebra



Kolloquiumsvortrag

Dienstag, 07. Mai 2019, 14:15 Uhr, Hörsaal III (Hauptgebäude Raum 1010|107)

Josef Hofbauer (Universität Wien, Österreich):

The Poincaré center problem - some examples

Given a (multi-)parameter family of planar ODEs $\dot{x} = f(a, x)$ with $x \in \mathbb{R}^2$ and parameter $a \in \mathbb{R}^d$, the problem is for which parameters a there is a center, i.e., an equilibrium where all nearby solutions are periodic. Poincare devised a method to solve this problem for analytic f. It leads to algebraic varieties in parameter space. I will discuss this for a few examples: (2d and maybe 3d) Lotka-Volterra systems and more general quadratic systems, and a family arising from chemical reaction theory. I will also discuss the relation to Hilbert's 16th problem.

Wir laden alle Interessierten herzlich ein.