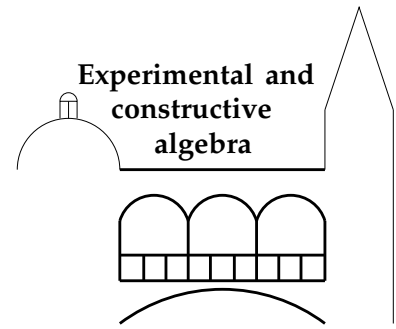


Graduiertenkolleg

# Experimentelle und konstruktive Algebra



## Kolloquiumsvortrag

Dienstag, 24. April 2018, 14:00 Uhr, Hörsaal V

**THOMAS STURM (MPI FÜR INFORMATIK, SAARBRÜCKEN):**  
***Effective Quantifier Elimination in Some Algebraic Theories***

Effective quantifier elimination procedures for first-order theories provide a powerful tool for generically solving a wide range of problems based on logical specifications. Given a first-order formula, the objective is to compute an equivalent quantifier-free formula. In contrast to general first-order provers, quantifier elimination procedures operate with a fixed set of admissible logical symbols with an implicitly fixed semantics. This admits the use of subalgorithms from symbolic computation. We discuss quantifier elimination techniques for some selected algebraic theories, including real closed fields, fragments of the integers, and the linear theory of  $p$ -adic fields. On the practical side we discuss some concrete application examples from those theories, solved with our open-source software Redlog.

Wir laden alle Interessierten herzlich ein.