



Universität Konstanz

**Fachbereich
Mathematik und Statistik**
Schwerpunkt
Reelle Geometrie und Algebra

Einladung

Im Oberseminar *Reelle Geometrie und Algebra* hält

Didier Henrion

(LAAS-CNRS, Toulouse)

am **Freitag, 28.04.2017**, einen Vortrag zum Thema:

Moment problems for polynomial differential equations

Der Vortrag findet um **13:30 Uhr** in **F420** statt.
Alle Interessenten sind herzlich eingeladen.

Abstract: The Lasserre hierarchy of semidefinite relaxations allows to solve non-convex semi-algebraic optimization problems at the price of solving a family of convex optimization problems of increasing size. The key idea consists of modeling a linear programming problem in the space of measures supported on the feasibility set and then dealing with the corresponding problems of moments.

In this talk, following a joint work with Lasserre, Prieur and Trélat, we explain how this idea can be extended to optimal control of polynomial ordinary differential equations with semi-algebraic constraints. Trajectories are modeled by occupation measures, standard objects in Markov decision processes and dynamical systems. We argue that it may be worthwhile to pursue an alternative approach consisting of using measures supported on infinite-dimensional Banach spaces of solutions. This would readily allow for extensions to nonlinear stochastic differential equations or partial differential equations.

Sebastian Gruler
Koordinator Oberseminar