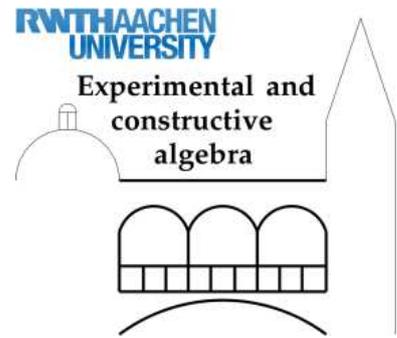


Graduiertenkolleg

Experimentelle und konstruktive Algebra



Kolloquiumsvortrag

Dienstag, 20. Dezember 2016, 14:00 Uhr, SeMath

DANIEL ROBERTZ (PLYMOUTH UNIVERSITY, UK):
Thomas-Zerlegung und nicht-lineare Kontrollsysteme

The Thomas decomposition method splits a given system of nonlinear partial differential equations into a finite family of so-called simple differential systems which are formally integrable and define a partition of the solution set of the original differential system. We apply the Thomas decomposition method to nonlinear control systems, in particular to the study of the dependence of the system behavior on parameters. Different simple systems of a Thomas decomposition describe different structural behavior of the control system in general. We give an introduction to the Thomas decomposition method and show how notions such as invertibility, observability and flat outputs can be studied. A Maple implementation of Thomas' algorithm is used to illustrate the techniques on explicit examples. This talk presents joint work with Markus Lange-Hegermann.

Wir laden alle Interessierten herzlich ein.