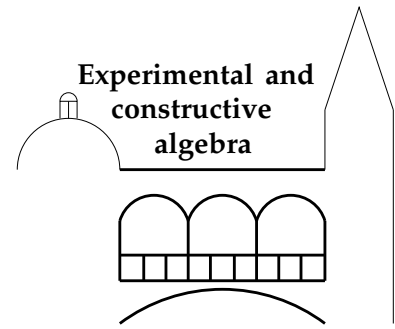


Graduiertenkolleg

Experimentelle und konstruktive Algebra



Kolloquiumsvortrag

Dienstag, 07. November 2017, 14:00 Uhr, Hörsaal III

JANA NEMCOVA (UNIVERSITY OF CHEMISTRY AND TECHNOLOGY, PRAG):
Realization Theory for Biology

Realization theory is a classical topic in mathematical control theory. It deals with the problem of finding a dynamical system, within a certain class of systems, and an initial state of this system such that it corresponds to an a priori given input-output or response map. The correspondence is given by getting the same output after applying the same input to the system and to the map.

Realization theory provides the theoretical basis for estimating model parameters from data (known as system identification in mathematical control theory) and for model reduction (replacing a complex model by a simpler one). For biological systems, it is also important from a theoretical point of view, as it helps to understand the various explanations, which are consistent with the same experimental data.

In this talk, I will briefly introduce realization theory, present the mathematical problem formulation and some basic results. Then I will concentrate on the realization theory for the class of semi-algebraic systems which is of particular interest for biology.

Wir laden alle Interessierten herzlich ein.