Der Wissenschaftsfonds.

UNIVERSITÄT SALZBURG

Fachbereich Mathematik
Hellbrunnerstraße 34
5020 Salzburg

Gastvortrag

Montag, 6. Juni 2016
13.15 Uhr
Seminarraum I

Dr. Dijana Kreso
Universität Salzburg

On Ritt's decomposition theory and Diophantine applications

Abstract:

In this talk I will give an overview of my research. One of my central interests is a topic known as Ritt's decomposition theory. Given a field *K*, a polynomial *f(x)* in *K[x]* of degree >1 is said to be indecomposable over *K* if it cannot be represented as a functional composition of lower degree polynomials in *K[x]*. Any polynomial of degree greater than 1 can clearly be represented as a composition of indecomposable polynomials. Such a representation, called a complete decomposition of a polynomial, does not need to be unique. In the 1920's, J.F. Ritt described the extent of non-uniqueness for complex polynomials. In so doing, Ritt exhibited some invariants of complete decompositions of complex polynomials. His results have application to various areas of mathematics. Building on the methods developed by Ritt, Fried and others, jointly with Mike Zieve I have extended these results to the setting of maps between curves and proved several new results. In my talk, I will discuss these results, as well as applications to Diophantine equations. Here I will exhibit some recent results obtained jointly with R.F. Tichy. Finally, I will present some open problems of my interest.

Einladender: Clemens Fuchs