Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

MUΦX
Lehrstuhl

Announcement

Seminar on Deformation Quantization and Geometry

10. 01. 2025 at 14:00 s.t.

Seminarroom 31

Thu Hien Nguyen

Analytic closure of sets of hyperbolic polynomials and hyperbolicity preservers

The Laguerre–Pólya class is a special class of entire functions that are locally the limit of sequences of real univariate hyperbolic polynomials. We present some necessary and sufficient conditions for entire functions to belong to the Laguerre–Pólya class, or to have no complex roots. These conditions involve only their Taylor coefficients, therefore, are easy to apply. For an entire function $f(z) = \sum_{k=0}^{k} z^k$, we define the second quotients of Taylor coefficients as $q_n(f) := \frac{a_{n-1}^2}{a_{n-2}a_n}$, $n \geq 2$, and formulate the conditions in terms of $q_n(f)$. We also discuss the operators that preserve real-rootedness. This is joint work with Anna Vishnyakova.

Invited by Madeleine Jotz