Universität Konstanz

Fachbereich
Mathematik und Statistik
Schwerpunkt
Reelle Geometrie und Algebra

Einladung

Im Oberseminar *Reelle Geometrie und Algebra* hält

Thorsten Theobald
(Goethe-Universität Frankfurt)

am **Freitag, 13.01.2017**, einen Vortrag zum Thema:

Imaginary projections of polynomials

Der Vortrag findet um **13:30 Uhr** in **F426** statt.
Alle Interessenten sind herzlich eingeladen.

Abstract: We introduce the imaginary projection $\mathcal{I}(f)$ of a multivariate polynomial $f \in \mathbb{C}[z]$ as the projection of the variety of f onto its imaginary part. Since a polynomial f is stable if and only if $\mathcal{I}(f)$ does not intersect the open positive orthant, the notion offers a novel geometric view underlying stability questions of polynomials.
We show that the connected components of the complement of the imaginary projections are convex, thus opening a central connection to the theory of amoebas and coamoebas. Building upon this, we establish structural properties of the components of the complement, such as lower bounds on their maximal number, prove a complete classification of the imaginary projections of quadratic polynomials and characterize the limit directions for polynomials of arbitrary degree.
(Based on joint work with Thorsten Jörgens and Timo de Wolff.)

Sebastian Gruler
Koordinator Oberseminar