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Order of vanishing of polynomials via convex geometry

Polynomial functions and their zero sets have been a center of attention for centuries. This is the original question of algebraic geometry, an area of modern mathematics which has been transformed into a huge industry and in turn has become mostly unrecognizable. For the purposes of this talk we go back in time and try to understand zero sets of polynomials in two variables. Already in this generality there exist old conjectures completely unaffected by the vast arsenal of modern algebraic geometry. The main topic of the talk is to find convex geometric ways to describe the order of vanishing of homogeneous polynomials (or more generally, global sections of line bundles on algebraic varieties), either on the nose or in an asymptotic sense. We will discuss valuation semigroups and Newton-Okounkov bodies along with some exciting questions about them.

Dec 13, 2023
14:15 – 15:15

Seminar room 1, ICT Gebäude
Technikerstraße 21a