

Mathematical Colloquia

Monday, 25 February 2019

17:15 h, Lecture Room 119

Dr. Filip Misev, MPIM Bonn

Metric distortion of algebraic varieties

Abstract:

Near a singular point, an algebraic variety X in C^n is embedded as the cone over a link. This is a classical theorem about the topology of singularities. However, if we exchange our topologist's spectacles for metric-sensitive glasses, we will see that these cones are usually metrically distorted: the Euclidean distance in the ambient C^n is usually not comparable, up to Lipschitz constants, to the inner distance given by minimising path length in X . In fact, an irreducible plane curve is metrically undistorted if and only if it is smooth.

I will present an infinite family of singularities in C^3 which are metrically undistorted, up to Lipschitz constants. To experts in this very active field of mathematics, these examples might perhaps come as a surprise, since the only other families of metrically undistorted singularities known so far require a large embedding dimension. Joint work with Anne Pichon.