Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 20. Oktober 2015

17 Uhr s.t., Geom H4

Prof. Dr. Klaus Hulek
(Leibniz Universität Hannover)

Rationality, Intermediate Jacobians and Degenerations

Abstract:

A basic question about any algebraic variety X is whether it is rational (i.e. its function field is the field of rational functions) or not. In the early 1970's Clemens and Griffiths solved a longstanding problem by showing that a smooth cubic threefold (i.e. a hypersurface in 4-dimensional projective space, given by a cubic equation) is unirational, but not rational. The main tool they used was the intermediate Jacobian of X.

After giving an introduction into rationality and intermediate Jacobians I want to discuss the question as to what happens when the cubic acquires (mild) singularities. The main result is that the intermediate Jacobian map can be extended regularly to the so-called wonderful blow-up of the moduli space of cubic threefolds. The latter is joint work with Casalaina-Martin, Grushevsky and Laza.

Vor dem Vortrag (ab 16.30 Uhr) stehen im Raum 327 Kaffee und Tee bereit.