Leibniz Universität Hannover

Oberseminar
Institut für Algebraische Geometrie

Claudia Stadlmayr
(TU München)

Which rational double points occur on del Pezzo surfaces?

Canonical surface singularities, also called rational double points (RDPs), can be classified according to their dual resolution graphs, which are Dynkin diagrams of types A, D, and E. Whereas in characteristic different from 2, 3, and 5, rational double points are "taut", that is, they are uniquely determined by their dual resolution graph, this is not necessarily the case in small characteristics. To such non-taut RDPs Artin assigned a coindex distinguishing the ones with the same resolution graph in terms of their deformation theory. In 1934, Du Val determined all configurations of rational double points that can appear on complex RDP del Pezzo surfaces. In order to extend Du Vals work to positive characteristic, one has to determine the Artin coindices to distinguish the non-taut rational double points that occur. In this talk, we will answer the question "Which rational double points (and configurations of them) occur on del Pezzo surfaces?" for all RDP del Pezzo surfaces in all characteristics. This will be done by first reducing the problem to RDP del Pezzo surfaces of degree 1 and then exploiting their connection to (Weierstrass models of) rational (quasi-)elliptic surfaces.

Donnerstag, 10.06.2021

16:30 - 17:30

Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.