

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 1 November 2021, 12:15-13:00
Seminarraum 00.003, Spiegelgasse 1 and Zoom

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Real Forms on Complex Varieties

ABSTRACT

Given a system of polynomials with real coefficients, we may wonder about real as well as complex solutions. Similarly, one can take a real algebraic variety and allow complex coordinates, obtaining a complex algebraic variety, the so-called complexification. In fact, it may happen that two real algebraic varieties have isomorphic complexification, yet as real algebraic varieties are not isomorphic over the real numbers. So given a complex algebraic variety X , we can try to find out how many nonisomorphic real forms – i.e. real algebraic varieties whose complexification is isomorphic to X – it possesses. In this talk, I will give an overview of results in the field, as well as the first example of a complex rational affine surfaces with uncountably many nonisomorphic real forms, which I constructed.