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A Talk by Immanuel van Santen (University of Bern) in Real Geometry and Algebra and Intercity Seminar

Friday, 24th April 2026, 13:45 PM in F426

Abstract: This talk is based on joint work with Benjamin Biaggi, Jan Draisma and Koen de Nooij.

Let f be a homogeneous polynomial of degree d in n variables. For each integer r , we consider the set L_f^r of degree d polynomials obtained by substituting the variables of f with linear forms in variables x_1, \dots, x_r . The symmetric (border) subrank of f is the largest r such that $\sum_i x_i^d$ lies in (the closure of) L_f^r .

I will first discuss the asymptotic behaviour of the symmetric (border) subrank of a generic f as n tends to infinity. I will then turn to low-degree cases, where the symmetric subrank and border subrank coincide. In this setting, classical invariant theory allows us to show that plane (line) sections of cubic (quartic) projective hypersurfaces realize all smooth isomorphism classes.

The advertised talk is a part of the [Intercity Seminar](#) in cooperation with the University of Bern, University of Neuchâtel and University of Applied Arts and Sciences of Southern Switzerland (SUPSI).

Department of
Mathematics
and Statistics

Real Geometry
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