



Algebraic Aspects of Directional Convexity

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A Talk by Chiara Meroni (ETH Zürich)
in Real Geometry and Algebra and Intercity Seminar

Friday, 24th April 2026, 12:30 PM in F426

Abstract: Directional convexity is a refined notion of convexity in which convexity is required only along specific directions. This concept arises naturally in the theory of multivariate calculus of variations and has intriguing applications in cryptography. However, constructing directional convex hulls remains a highly challenging problem. In the few cases where explicit constructions are known, the resulting hulls exhibit rich algebraic and combinatorial structures, sometimes polyhedral, other times semialgebraic. In this talk, I will review key results and algorithms related to directional convexity and present recent developments from a joint work with Bogdan Raita.

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
and Algebra Group