PARIS LODRON UNIVERSITÄT SALZBURG

SALZBURG MATHEMATICS COLLOQUIUM
Summer 2023

Thomas Wannerer (Jena)

„On a generalization of the Alexandrov-Fenchel inequality“

May 11, 2023

Abstract:

The Alexandrov-Fechel inequality is one of the most powerful inequalities in convex geometry. It directly implies the classical isoperimetric inequality and can be used, for example, to investigate the stability of the isoperimetric and related inequalities. In the 1970s Khovanskii and Teissier discovered a remarkable connection between the Alexandrov-Fenchel inequality and the Hodge-Riemann bilinear relations. Ross and Toma recently discovered a generalization of the Hodge-Riemann bilinear relations to Schur polynomials in Kähler forms.

In this talk we outline an alternative approach to this result via the theory of Lorentzian polynomials, recently introduced by Brändén and Huh. Our approach works in various situations and yields in particular a generalization of the Alexandrov-Fenchel inequality.

Based on joint work with Julius Ross and Hendrik Süß.

Thursday, **15:00-15:45**
Hörsaal 414, 1. Stock

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