Public Abstract

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Title:APPLICATIONS OF FOURIER ANALYSIS TO INTERSECTION BODIES

The concept of an intersection body is central for the dual Brunn-Minkowski theory and has played an important role in the solution of the Busemann-Petty problem. A more general concept of k-intersection bodies is related to the generalization of the Busemann-Petty problem. The result examines the conjecture that the classes of k-intersection bodies increase with k. In particular, the result constructs a 4-intersection body that is not a 2-intersection body.
The second chapter is concerned with the geometry of spaces of Lorentz type. We define a 1-homogeneous functional based on Lorentz type norms and examine some geometric properties of the space R^n equipped with the 1-homogeneous functional.