Institute of Analysis and Number Theory

Mini-Series on Harmonic Analysis and Discrete Geometry. Lecture 4.

25.10.2018, 14.00-15.30

Seminarraum Analysis-Zahlentheorie, Kopernikusgasse 24, 2.OG

Spherical designs

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Spherical designs are discrete point sets on the sphere which provide exact equal-weight cubature formulas for polynomials up to a certain degree, i.e. the average of any polynomial over the points of a design is equal to the average over the whole sphere. Several years ago, Bondarenko, Radchenko, and Viazovska solved a long-standing conjecture of Korevaar and Meyers, showing that there exist designs of degree t on the d-dimensional sphere, which have t^d points. We shall discuss properties of spherical designs and present the proof of the aforementioned conjecture.

This is the fourth lecture in a mini-series of four lectures. All lectures are independent and fully self-contained. No prior knowledge of any of the subjects involved in the talk will be assumed.

P. Grabner, Ch. Aistleitner