
PETER PIVOVAROV, University of Missouri

Bounding marginal densities via affine isoperimetry

I will discuss affine isoperimetric inequalities for bounded, integrable functions on the Grassmannian manifold and affine Grassmannian. These are motivated by analogous inequalities for convex sets, due to Busemann-Straus, Grinberg and Schneider. I will show how such inequalities, placed in an appropriate functional setting, carry probabilistic information. Specifically, I will explain how any probability measure with a bounded density admits many well-bounded marginal distributions. Applications to small ball probabilities will also be mentioned. This is joint work with Susanna Dann and Grigoris Paouris.