ANALYSIS AND NUMBER THEORY SEMINAR

Stability Results for Sections of Convex Bodies

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WHERE: Chase 319

ABSTRACT:

Geometric tomography studies various subsets of Euclidean space using lower-dimensional data. Classic problems in this field ask when a convex body is uniquely determined by its sections with certain affine hyperplanes (a convex body $K \subset \mathbb{R}^n$ is a convex and compact set with non-empty interior). In such problems, whether K is origin-symmetric is important (i.e. does $K = -K$?), so it is desirable to characterize this property. A maximal section of K refers to a section of maximal $(n-1)$ - dimensional Hausdorff volume amongst all those sections of K perpendicular to a fixed direction $\xi \in S^{n-1}$. Makai, Martini, and Odor have shown that if every section of K through the origin is maximal, then K is origin-symmetric. In my talk, I will discuss joint work with Vladyslav Yaskin on a stability version of their result.

Any questions, please e-mail: rnoble@mathstat.dal.ca.