

SBU DEPARTMENT OF MATHEMATICS &
INSTITUTE FOR MATHEMATICAL SCIENCES

Geometry/Topology Seminar

Semyon Alesker

Tel Aviv University, Tel Aviv, Israel

Few conjectures on intrinsic volumes on Riemannian manifolds and Alexandrov spaces

The celebrated Hadwiger's theorem says that linear combinations of intrinsic volumes on convex sets are the only isometry invariant continuous valuations (i.e. finitely additive measures). On the other hand H. Weyl has extended intrinsic volumes beyond convexity, to Riemannian manifolds. We try to understand the continuity properties of this extension under the Gromov-Hausdorff convergence (literally, there is no such continuity in general). First, we describe a new conjectural compactification of the set of all closed Riemannian manifolds with given upper bounds on dimension and diameter and lower bound on sectional curvature. Points of this compactification are pairs: an Alexandrov space and a constructible (in the Perelman-Petrinin sense) function on it. Second, conjecturally all intrinsic volumes extend by continuity to this compactification. No preliminary knowledge of Alexandrov spaces will be assumed, though it will be useful.

Tuesday - February 12, 2019
Room Math Tower P-131 4:00 pm