

המחלקה למתמטיקה, בן-גוריון

קולוקוויום

ביום שלישי, 26 באוקטובר, 2021

בשעה 14:30 – 15:30

בMath-101

ההרצאה

Integral geometry and valuation theory in pseudo-Riemannian spaces

תינתן על-ידי

Dmitry Fafiman (Tel Aviv University)

תקציר: We will discuss the Blaschke integral geometry and its fundamental forms. First we recall the pseudo-Riemannian manifold theory. Then we discuss the notion of volume, intrinsic volumes, and quermassintegrals. We will discuss the work of Weyl, H. on manifolds. Those notions were later extended to Riemannian manifolds. A remarkable fact: a Euclidean manifold M embedded in a space, a given metric on M is invariant under the volume of an ϵ -tube around M . We then discuss Alesker's theory of valuations, which provides a powerful toolset for the study of integral geometry. In particular, we will explain some of the ideas used in the theory of valuations. Finally, we will discuss the recent results in integral geometry of pseudo-Riemannian manifolds, some of which are in formulas of Crofton's collection. In particular, we will discuss the Chern-Gauss-Bonnet formula for varying metrics. Signature. Partially based on joint works with S. Alesker, G. Solanes.