Department of Mathematics, BGU

Colloquium

On *Tuesday, May ,19 2026*

At *14:30 – 15:30*

In *Math 101-*

Boaz Klartag (Weizmann Institute)

will talk about

The unreasonable effectiveness of the convexity assumption in high dimensions

Abstract: We survey progress from the past five years on the distribution of mass in high-dimensional convex bodies and in probability distributions with convexity properties. The concentration of measure phenomenon has traditionally been studied in highly regular or structured settings, such as spheres, Hamming cubes, Gaussian measures, Markov chains, and martingales. It turns out that convexity assumptions provide an alternative source of regularity in high dimensions with remarkably similar features: Lipschitz functions are highly concentrated, the isoperimetric problem is nearly saturated by hafl-spaces (up to logarithmic factors), and the central limit theorem is nearly as strong as in the setting of independent random variables. The main developments discussed include the resolution of Bourgain's slicing problem and the Variance Conjecture, as well as recent progress on the isoperimetric problem for high-dimensional convex bodies. Based on joint work with P. Bizeul and J. Lehec.