

Lethbridge Number Theory and Combinatorics Seminar

Monday — November 6, 2017

Room: C630

Time: 12:00 to 12:50 p.m.

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Bounds for totally separable translative packings in the plane

Abstract: A packing of translates of a convex domain in the Euclidean plane is said to be totally separable if any two packing elements can be separated by a line disjoint from the interior of every packing element. This notion was introduced by G. Fejes Toth and L. Fejes Toth (1973) and has attracted significant attention. In this lecture I will discuss the separable analogue of the classical inequality of N. Oler (from geometry of numbers) for totally separable translative packings of convex domains and then derive from it some new results. This includes finding the largest density of totally separable translative packings of an arbitrary convex domain and finding the smallest area convex hull of totally separable packings (resp., totally separable soft packings) generated by given number of translates of a convex domain (resp., soft convex domain). Last but not least, we determine the largest covering ratio (that is, the largest fraction of the plane covered) of totally separable soft circle packings with given soft parameter. This is a joint work with Zsolt Langi (Univ. of Technology, Budapest, Hungary).

EVERYONE IS WELCOME!

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