

Isoperimetric inequalities in high dimensional convex sets



mardi 21 mai 2024 - vendredi 24 mai 2024

IHP

Programme Scientifique

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\mbox{Isoperimetric inequalities in high dimensional convex sets}

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This IHP school will focus on advancements from the last 3-4 years in Bourgain's slicing problem and the isoperimetric conjecture proposed by Kannan, Lovasz and Simonovits (KLS). The slicing problem by Bourgain is an innocent-looking question in convex geometry. It asks whether any convex body of volume one in an n -dimensional Euclidean space admits a hyperplane section whose $(n-1)$ -dimensional volume is at least some universal constant. There are several equivalent formulations and implications of this conjecture, which occupies a rather central role in the field. The slicing conjecture would follow from the KLS isoperimetric conjecture, which suggests that the most efficient way to partition a convex body into two parts of equal volume so as to minimize their interface, is a hyperplane bisection, up to a universal constant. Presently, these two conjectures are known to hold true up to factors that increase logarithmically with the dimension.

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& \mbox{Tuesday 21} & \mbox{Wednesday 22} & \mbox{Thursday 23} & \mbox{Friday 24} \\ \hline

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\mbox{10h-12h} & Lehec & Lehec & Lehec & Lehec \\ \hline

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\mbox{13h45-15h45} & Klartag & Klartag & Klartag & Klartag \\ \hline

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