

Generalised convexity and related limit theorems

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The standard convex closed hull of a subset of \mathbb{R}^d is defined as the intersection of all images, under the action of a group of rigid motions, of a half-space containing the given set. We propose a generalisation of this classical notion, that we call a (K, \mathbb{H}) -hull, and which is obtained from the above construction by replacing a half-space with some other convex closed subset K of the Euclidean space, and a group of rigid motions by a subset \mathbb{H} of the group of invertible affine transformations. The above construction encompasses and generalises several known models in convex stochastic geometry and allows us to gather them under a single umbrella. The talk is based on recent works by Kalbuchko, Marynych, Temesvari, Thäle (2019), Marynych, Molchanov (2021) and Kabluchko, Marynych, Molchanov (2022+).