

Poisson–Voronoi tessellations and fixed price in higher rank (5/5)

vendredi 18 juillet 2025 09:15 (1 heure)

We will start by defining and motivating the Poisson point process, which is, informally, a “maximally random” scattering of points in space, and discussing the ideal Poisson–Voronoi tessellation (IPVT), a new random object with intriguing geometric properties when considered on a semisimple symmetric space (the hyperbolic plane, for example). In joint work with Mikolaj Fraczyk, we use the IPVT to prove a result on the relationship between the volume of a manifold and the number of generators of its fundamental group (for higher rank semisimple Lie groups, the minimum number of generators in a lattice is sublinear in the covolume). In this minicourse we will unpack the proof. No prior knowledge on Poisson–Voronoi tessellations, fixed price or higher rank will be assumed.

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