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# Poisson–Voronoi tessellations and fixed price in higher rank

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We define and motivate the Poisson point process, which is, informally, a "maximally random" scattering of points in space. We introduce 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 and Sam Mellick, 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. We give some intuition for the proof. No prior knowledge on Poisson point processes, fixed price, or higher rank will be assumed.

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