LIMIT THEORY FOR PLANAR GILBERT TESSELLATIONS

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Abstract: A Gilbert tessellation arises by letting linear segments (cracks) in \( \mathbb{R}^2 \) unfold in time with constant speed, starting from a homogeneous Poisson point process of germs in randomly chosen directions. Whenever a growing edge hits an already existing one, it stops growing in this direction. The resulting process tessellates the plane. The purpose of the present paper is to establish a law of large numbers, variance asymptotics and a central limit theorem for geometric functionals of such tessellations. The main tool applied is the stabilization theory for geometric functionals.

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