

SECOND-ORDER THEORY FOR ITERATION STABLE TESSELLATIONS

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Abstract: This paper deals with iteration stable (STIT) tessellations, and, more generally, with a certain class of tessellations that are infinitely divisible with respect to iteration. They form a new, rich and flexible family of space-time models considered in stochastic geometry. The previously developed martingale tools are used to study second-order properties of STIT tessellations. A general formula for the variance of the total surface area of cell boundaries inside an observation window is shown. This general expression is combined with tools from integral geometry to derive exact and asymptotic second-order formulas in the stationary and isotropic regime. Also a general formula for the pair-correlation function of the surface measure is found.

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