Tree and Grid factors of General Point processes

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Abstract

We study isomorphism invariant point processes of R^d; whose groups of symmetries are almost surely trivial. We define a 1-ended, locally finite tree factor on the points of the process, that is, a mapping of the point configuration to a graph on it that is measurable and equivariant with the point process. This answers a question of Holroyd and Peres. The tree will be used to construct a factor isomorphic to Z^n. This perhaps surprising result (that any d and n works) solves a problem by Steve Evans. The construction, based on a connected clumping with 2^i vertices in each clump of the i'th partition, can be used to define various other factors.

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Bibliography

1. K. S. Alexander. Percolation and minimal spanning forests in infinite graphs. *Ann. Probab.* 23 (1995), 87-104. Math. Review 96c:60114
2. I. Benjamini, O. Schramm. Percolation in the hyperbolic plane. *J. Amer. Math. Soc.* 14 (2001), 487-507. Math. Review 2002h:82049
3. P. A. Ferrari, C. Landim, H. Thorisson. Poisson trees, succession lines and coalescing random walks. Preprint. Math. Review number not available.
4. A. E. Holroyd, Y. Peres. Trees and matchings from point processes. *Elect. Comm. in Probab.* , 8 (2003), 17-27. Math. Review number not available.

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