

Title:

Deterministic Poisson Thinning

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Abstract:

It is well known that if each point of a Poisson process A with intensity λ is selected independently with suitable probability then the selected subset B is a Poisson process with intensity ρ . Given the process A , is it possible to select a subset B of A as a deterministic function of A so that B is a Poisson process with density ρ ? In infinite volume the answer is yes. In finite volume, the answer depends on λ and ρ in a non-obvious way. In particular, the set of parameters where it is possible is monotone in λ but not in ρ .