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Abstracts of Short Communications and Posters

Section:

12. Probability and Statistics

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The genealogy of a cluster in the multitype voter model.
Consider the voter model on $\mathbb{Z}^d$ where initially all sites have different type. A classical result by Sawyer states that the size of the cluster containing the origin has a gamma limit law with shape parameter 2. In the voter model with mutation the size of this cluster has an equilibrium distribution, which has an exponential limit law as the mutation rate goes to 0. These limit distributions agree with those of the respective quantities of the size-biased Galton-Watson tree which can be viewed as describing the genealogy of the cluster in dimension $d = \infty$. We give a probabilistic explanation of the limit laws in this degenerate case and discuss how the results carry over to the voter model.