

GRAPHICAL REPRESENTATION OF SOME DUALITY RELATIONS IN STOCHASTIC POPULATION MODELS

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Abstract

We derive a unified stochastic picture for the duality of a resampling-selection model with a branching-coalescing particle process (cf. MR2123250) and for the self-duality of Feller's branching diffusion with logistic growth (cf. MR2308333). The two dual processes are approximated by particle processes which are forward and backward processes in a graphical representation. We identify duality relations between the basic building blocks of the particle processes which lead to the two dualities mentioned above.

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