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Local approximation of a metapopulation's equilibrium

Abstract

In previous work, we demonstrated that in a certain sense deterministic metapopulation models can provide a good approximation to their stochastic counterparts. Assuming the patch locations are randomly distributed, we establish conditions under which the equilibrium level of the deterministic metapopulation model can be approximated using local extinction and colonisation rates and the density of patches. Probabilistic error bounds are also given. This is joint work with A.D. Barbour and P.K. Pollett.