

Existence of solutions and localisation limit of a nonlocal cross-diffusion system for multi-species populations

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Population dynamics can be modelled by stochastic interacting any particle systems. However their numerical approximation is time consuming so one prefers to investigate simpler macroscopic models, which are derived from the many particle systems in the mean field limit. When several species are involved, this leads to nonlocal cross-diffusion terms. We investigate a nonlocal cross-diffusion system obtained in the mean field limit from such a particle system. Using the entropy method we prove existence of solutions and reveal the double entropy structure this system exhibits. Additionally we show that the nonlocal model reduces to a local model when the convolution kernels converge to a delta distribution.

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Classification de Session: Poster session