

Multispecies cross-diffusions: from a nonlocal mean-field to a porous medium system without self-diffusion.

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We consider a system of PDE describing the long-range interaction between individuals. The system is quadratic, written under the form of transport equations with a nonlocal self-generated drift. We establish the localisation limit, that is the convergence of nonlocal to local systems, when the range of interaction tends to 0. The major new feature in our analysis is that we do not need diffusion to gain compactness, but rely on a full rank assumption on the interaction kernels. These theoretical results are sustained by numerical simulations.