Explicit rates of convergence for the localization limit of some cross-diffusion systems

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In this poster I will present an ongoing work with Ansgar Jüngel concerning the so-called localization limit of some cross-diffusion systems. Roughly speaking some of these systems can be derived as a mean field limit of stochastic many-interacting particles systems. More precisely this mean field approach leads to a system of nonlocal (in convolution form) cross-diffusion systems. Then to derive the local cross-diffusion system, one consider a sequence of kernels which tends to the Dirac measure in the sense of distributions. This limit from the nonlocal to the local system is called localization limit. In particular it has been rigorously shown that this localization limit holds for some cross-diffusion systems arising in population dynamics. However these proofs are based on compactness methods and so far no explicit rates of convergence were available. In this poster I will explain our strategy in order to obtain such explicit rates of convergence in some L^p norms.