

How strong is chemotactic cross-diffusion?

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In the past years various PDE models for chemotactic processes have attracted growing interest in mathematical research. A basic but important issue in the analysis of a given model consists of clarifying whether and, if, to which extent the key mechanism of cross-diffusion overbalances other incorporated processes such as self-diffusion or logistic growth inhibition. The talk summarizes some known, and presents some recent results as well as open questions in this direction, where the main focus will be on the question whether aggregation may occur in the strong sense of blow-up of some solutions.