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*On the competition of spatially distributed populations choosing different diffusion strategies*

For spatially distributed models of population dynamics described by reaction-diffusion equations with unequally distributed resources, we consider various types of diffusion and compare models with regular diffusion and the strategy which favors the movement in the direction of the highest per capita available resources. For several populations which only differ by the diffusion coefficient, there are theoretical results that the slowest population has an evolutionary advantage. We demonstrate that under quite non-restrictive conditions, the population with the directed diffusion strategy survives in the competition with a similar population which adopted the regular diffusion, while the latter population extincts, independently on the diffusion coefficient. This is a joint work with my PhD students L. Korobenko and Md. Kamrujjaman.