Long time asymptotics in a chemotaxis-consumption system

Jaewook Ahn (Dongguk University)

Abstract. This talk considers the long-term behavior of a chemotaxis-consumption system subject to no-flux/Dirichlet boundary conditions. The main result says that for a sufficiently small initial bacterial population, the solution converges to a unique, nonhomogeneous steady state as time approaches infinity. This convergence confirms that in the large time limit, the bacterial population aggregates near the boundary where the signal is concentrated.