Singular Limit and Global Stabilization of a PDE Model for Chemotaxis with Dynamic Boundary Conditions

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We obtain global well-posedness and large-time behavior of a PDE model for chemotaxis with logarithmic sensitivity and logistic growth with dynamic boundary condition by imposing appropriate conditions on the boundary data. We show that there are boundary layer profiles for the singular diffusion limit similar to the Navier-Stokes equations boundary layer phenomena.

Keywords: PDE, chemotaxis, global existence