

1145-35-3026

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23185. *Uniqueness and convergence on equilibria of the Keller-Segel system with subcritical mass.*

This talk is concerned with the uniqueness of solutions to the nonlocal semi-linear elliptic equation. This equation arises as the stationary problem of the well-known classical Keller-Segel model describing chemotaxis. As an application of the uniqueness results, we prove that the radially symmetric solution of the classical Keller-Segel system with subcritical mass subject to Neumann boundary conditions will converge to the unique constant equilibrium as time tends to infinity if the domain is a disc in two dimensions. As far as we know, this is the first result that asserts the exact asymptotic behavior of solutions to the classical Keller-Segel system with subcritical mass in two dimensions. (Received September 26, 2018)