

Partial Differential Equations Seminar

Title Keller–Segel system and generalized SQG equations

Speaker 나정경 대학원생

Affiliation 서울대학교 수학과

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Location 과학관 254 강연

Abstract

In this talk, I will discuss some results on the Keller–Segel system of consumption type and the generalized SQG equations. The Keller–Segel system describes the evolution of oxygen and aerobic bacteria densities. It is known that the Keller–Segel system coupled with the incompressible Navier–Stokes equations has the global classical solution in two dimensions. Replacing the Navier–Stokes equations with the Euler equations, I will establish the global well-posedness of the system provided that the initial oxygen density is sufficiently small. Moreover, I will discuss finite-time singularity formations for the fully inviscid Keller–Segel system. Concerning generalized SQG equations, I will focus on local well-posedness of logarithmically singular case as well as its application.



연세대학교 수학기산학부

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