

Aobayama Chemotaxis Seminar

日時：2026 年 8 月 10 日 16 時 30 分–17 時 30 分

場所：東北大学 青葉山キャンパス 理学研究科合同 A 棟 8 階 801 室

発表言語：英語

講演者：細野 竜也 氏 (大阪公立大学 & Université Toulouse III - Paul Sabatier)

講演題目：Global existence and boundedness for a degenerate chemotaxis system with indirect signal production via minimizing movement schemes

講演要旨：We establish the global existence and boundedness of weak solutions to the Cauchy problem for a fully parabolic chemotaxis system with degenerate cell diffusion and indirect signal production. While the classical and degenerate Keller–Segel systems admit a gradient flow structure, the more intricate coupling induced by the indirect signal production mechanism prevents the present system from possessing such a structure, despite the existence of a Lyapunov functional. To construct weak solutions, we employ a time-discrete scheme introduced by Yoshifumi Mimura (2024), in which each equation is solved separately via a minimizing movement approach. By combining a porous-medium-type flow interchange argument with discrete maximal regularity, we derive integrability estimates sufficient to overcome the compactness and convergence difficulties arising in the limiting process. This approach not only yields global weak solutions but also establishes their boundedness already at the time-discrete level.

This work is based on joint work with Philippe Laurençot (CNRS & Université Savoie Mont Blanc).

参加登録: <https://forms.gle/6KPnuQetMae1HFQAA>

学期末休業期間中のため、セミナー会場の建物は施錠されております。参加される方はセミナー前日までに必ず参加登録をお願い致します。参加登録された方には、当日の入場方法をご案内いたします。

セミナー website: <http://www.math.tohoku.ac.jp/~fujie/ACS.html>

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