



复旦大学数学科学学院 数学综合报告会

报告题目: Nonlocal-to-Local Convergence for a Diffuse Interface Model
for Two Phase Flow with Matched Densities

报告人: Dr. Christoph Hurm (University of Regensburg)

报告时间: 2026年3月31日星期二, 10:00—11:00

报告地点: 光华楼东主楼 1801 室

报告摘要: We prove convergence of a sequence of strong solutions to a diffuse interface model for the two-phase flow of incompressible fluids with matched densities with a nonlocal Cahn-Hilliard equation to the strong solution to the corresponding system with a standard local Cahn-Hilliard equation. The analysis is done in the case of constant viscosity. The proof is based on an energy method and convergence of the linearized operators in the Cahn-Hilliard equations.

References

- [1] H. Abels, C. Hurm. Strong nonlocal-to-local convergence of the Cahn-Hilliard equation and its operator. *J. Differential Equations*, 402: 593-624, 2024.
- [2] C. Hurm, P. Knopf, A. Poiatti. Nonlocal-to-local convergence rates for strong solutions to a Navier-Stokes-Cahn-Hilliard system with singular potential. *Communications in Partial Differential Equations*, 49(9), 832-871, 2024.

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