



复旦大学数学科学学院

数学综合报告会

报告题目: Convergence of Free Boundaries in the Incompressible Limit of Tumor Growth Models

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时间: 2024-04-29 星期一 10:00-11:00

地点: 光华楼东主楼1601室

报告摘要:

We investigate the general Porous Medium Equations with drift and source terms that model tumor growth. Incompressible limit of such models has been well-studied, where convergence of the density and pressure variables are established, while it remains unclear whether the free boundaries of the solutions exhibit convergence as well. In this talk, we shall present an affirmative result by showing that the free boundaries converge in the Hausdorff distance in the incompressible limit. It relies on quantifying the relation between the free boundary motion and spatial average of the pressure, and establishing a uniform-in- m strict expansion property of the pressure supports. We derive upper bounds for the Hausdorff dimensions of the free boundaries. This is based on a joint work with Yuming Paul Zhang.

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