



## 复旦大学数学科学学院 数学综合报告会

报告题目：A sixth-order Cahn-Hilliard model for biological membranes with hydrodynamic coupling

报告人：Prof. Andrea Signori (Politecnico di Milano)

报告时间：2026年6月16日星期二，10:00—11:00

报告地点：光华楼东主楼1403室

报告摘要：In this talk, I discuss a class of coupled partial differential equation systems describing the interaction between an incompressible viscous fluid and a deformable membrane modeled through a phase-field variable. The analysis is carried out within the Navier-Stokes framework, allowing for the description of physically relevant regimes arising in biological membranes and amphiphilic materials. Particular attention is devoted to an associated optimal control problem in two spatial dimensions. The results highlight the interplay between fluid flow and membrane curvature in driving phase evolution and shaping membrane morphology.

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