



复旦大学数学科学学院 数学综合报告会

报告题目: Sharp interface limit in certain phase field gradient flows

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报告地点: 光华楼东主楼 1801 室

报告摘要: In this talk, I will first introduce background material on phase field models and sharp interface limit problems from the literature and then present some recent results. In particular, I will describe a general framework, based on the work of Alikakos-Bates-Chen, and its application to functionalized Cahn-Hilliard (FCH) models. A key ingredient in the analysis is the coercivity of the linearized operator, which becomes singular in the sharp interface limit. In our work on fourth order FCH models, we are able to identify the necessary cancellations using classical methods, which in turn motivates further investigation into the underlying mechanism. To address this more systematically, we introduce a variational approach to establish a crucial kernel estimate. This method is both generic and particularly well suited to phase field models.

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