# 学术报告

## Sharp interface limit of some diffuse interface models

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报告摘要： There are two important model categories: sharp interface models and diffuse interface models to study phase transition problems. For sharp interface models the interface is assumed to be a hypersurface with zero width. In contrast, diffuse interface models treat the interface as a transition layer (also called diffuse interface) with small width, and another a typically smooth order parameter (also called phase field) is introduced to model the process of phase transition across the transition layer. Both model types are usually derived from physical principles or observations and can be used to model the same situations in applications. This motivates to study the connection between diffuse and sharp interface models by sending the interfacial width to zero. Such limits are known as "sharp interface limits". In this talk we shall discuss sharp interface limits of some diffuse interface models. This is done by constructing an approximate solution from the limiting flow via matched asymptotic expansions, and then estimating its difference with the real solution which is based on a spectrum inequality of the linearized operator at the transition profile (also called optimal profile).

嘉宾介绍： 费明稳，教授，博士生导师，安徽师范大学"学科领军人才"，安徽省学术和技术带头人后备人选，主要从事Navier-Stokes方程边界层和相场模型界面动力学等方面研究，部分研究成果发表在Invention Mathematics、Communications in Mathematical Physics、Archive for Rational Mechanics and Analysis、Journal de Mathématiques Pures et Appliquées、SIAM Journal on Mathematical Analysis、Physica D、Peking Mathematical Journal等国内外期刊上。

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