数学与系统科学研究院

计算数学所学术报告

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报告题目：

Sharp Interface Models for Solid-State Dewetting Problems

邀请人： 许现民 副研究员

报告时间：2018 年 5 月 30 日（周三）

上午 **10:00-11:00**

报告地点： 科技综合楼三层

311 报告厅

Abstract：

In this talk, I will present sharp interface models with anisotropic surface energy for simulating solid-state dewetting and the morphological evolution of patterned islands on a substrate. We will show how to derive the sharp interface model via thermovariation dynamics, i.e. variation of the interfacial energy via an open curve with two triple points moving along a fixed substrate. The sharp interface model tracks the moving interface explicitly and it is very easy to be handled in two dimensions via arc-length parametrization. An efficient and accurate parameteric finite element method (PFEM) was proposed for the sharp interface models. It is applied to study numerically different setups of solid-state dewetting including short and long island films, pinch-off, hole dynamics, semi-infinite film, tiny particle migration, etc. Our results agree with experimental results very well. In addition, extension to curved substrate and three dimensions will be discussed. Finally, we also present a reduced variatonal model via the Onsager's principle for small particle migration in solid-state dewetting. This is joint works with Wei Jiang, David J. Srolovitz, Carl V. Thompson, Yan Wang and Quan Zhao.

欢迎大家参加！