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：

On coarsening rates for some models of phase transitions

邀请人： 陈志明研究员

报告时间： 2007 年 8 月 22 日(周三)

上午 10:00—11:00

报告地点： 科技综合楼三层 311

计算数学所报告厅

Abstract：

In the late stages of heterogeneously nucleated phase transitions, a two-phase mixture is created, composed of particles of

one phase dispersed in a matrix of the other. Initially the pattern of the phases is very complicated, the particles are small and their total surface area is large. According to thermodynamics, the system evolves in order to decrease the total surface area and conserve the total mass or volume of the particles. Smaller particles shrink and disappear and larger ones grow. It is widely observed that some typical length scale that characterizes the particle size increases and the length scale behaves as a temporal power law.

The above mentioned phenomenon is called coarsening. Some of the important issues are how to define the 'typical length scale' and how to describe the temporal power law. We will discuss several models of phase transitions and define some physically natural length scales. Then some mathematically rigorous results will be presented which give universal bounds on the temporal power laws. Some numerical results will also be presented if time permits. These are joint work with R. L. Pego.

欢迎大家参加！