

國立中山大學應用數學系

學術演講

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講題：Self-Avoiding Walk in Random Environment
時間：2021/10/28（Thursday）14:10 ~ 15:00
地點：理 SC4009-1 教室
茶會：13:30

Abstract

Self-avoiding walk (SAW) is a model for linear polymers and has been studied in the chemistry, physics and mathematics literature. Some rigorous mathematical results have been proven, while chemists and physicists formulated conjectures that are believed to be true. As we see the classical examples of one-dimensional random walk in random environment, it would be natural to consider an inhomogeneous environment for the stochastic models which can describe both natural and social scientific phenomena. In this talk, we mainly consider the phase transition and the critical phenomenon for SAW in random environment. We are interested in the dependence of the critical point to dimensions, the critical behavior of the susceptibility, especially the critical exponent of the susceptibility at the criticality, and the crossover between weak and strong disorder regimes. The behavior of the number of n -step SAW trajectories in random environment is essential for these problems.

From the view of statistical mechanics, to understand the problems above is important to understand the behavior of linear polymers. Also the problem itself is intriguing from the view of combinatorics.

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