Three-Dimensional Tricritical Spins and Polymers

SPEAKER: Gordon Slade, University of British Columbia
TIME: 11:00am - 12:00pm, Tuesday, March 26, 2019
VENUE: Room 211, Pudong Campus, 1555 Century Avenue
(上海纽约大学211教室, 上海市浦东新区世纪大道1555号)

ABSTRACT

We construct the tricritical point for a model of n-component continuous spins with $\phi^6$ interaction on the 3-dimensional integer lattice. We do the same for a supersymmetric version of the model, where the tricritical point is the so-called theta point for polymer collapse. In both cases, we prove that the tricritical two-point function has Gaussian decay, namely $|x|^{-1}$. The proof uses a rigorous renormalisation group analysis. This is joint work with Roland Bauerschmidt and Martin Lohmann.

BIOGRAPHY

Gordon Slade is Professor of Mathematics at the University of British Columbia in Vancouver, Canada, where he also obtained his Ph.D. in 1984. Previously he held a postdoctoral position at the University of Virginia and a faculty position at McMaster University. Slade has worked for over thirty years on problems in probability theory and statistical mechanics that arise from critical phenomena. His current research focus is on the development and application of a rigorous nonperturbative renormalisation group method. Slade is a Fellow of the Royal Societies of London and Canada.