

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

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Lipschitz-Saal (LWK 1.016)

Loren Coquille

Institut Fourier, Université de Grenoble Alpes

Extremal decomposition of free state for finite-spin models on regular trees

At very low temperature, the free state of the Ising model on a regular tree is not extremal. Moreover, its extremal decomposition is a continuous measure, supported on (uncountably many) inhomogeneous extremal states, which have some kind of « glassy » feature. I will present a proof of this result, which provides explicit concentration bounds on "branch overlaps", playing the role of an order parameter for typical extremals. The proof extends quite generally to ferromagnetic finite-spin models, even slightly asymmetric (i.e. where small inhomogeneous field terms are added), which shows that the above behaviour is generic on regular trees.

This is a joint work with Christof Külske (Bochum) and Arnaud Le Ny (Paris-Est Créteil).