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Forum de Physique Statistique @ ENS

Mercredi 9 Octobre 2019, 12 :00
LPENS, Conf IV
Domaines : cond-mat.stat-mech

Titre : *Statistics of Avalanche Currents in the Raise and Peel model*

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Résumé : *The Raise and Peel model is a stochastic model of fluctuating interface with non-local avalanche dynamics. Its dynamical rules stem from the structure of a specific representation of the Temperley-Lieb algebra, and its stochastic generator can be represented by the Hamiltonian of the XXZ Heisenberg quantum spin chain with twisted boundary conditions. We describe the recent progress in description of the statistics of the avalanches in the model. We focus on the large deviations of two avalanche currents in the thermodynamic limit, which reveal a phase transition in the behaviour of one current conditioned to atypical values of another one. We also describe a proof of the laws of large numbers for the two currents at arbitrary finite lattices, which in addition proves two earlier conjectures on the structure of the stationary state of the model. The technique is based on the analysis of the largest eigenvalue of the deformed stochastic generator using the Bethe ansatz and Baxter's T-Q relation.*