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Forum de Physique Statistique @ ENS

Mercredi 19 Mars 2025, 12 :45
LPENS, 3 rue dUlm (College de France)
Domaines : cond-mat.stat-mech

Titre : *The 1d Ising model with long-range interactions*

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Résumé : *I will discuss the classical 1d Ising model with interactions decaying as an inverse power of the distance,* $1/r^p$*. This model exhibits a rich phase diagram and boasts an illustrious history. As shown by Dyson in 1969, there is a phase transition for p between 1 and 2. It is expected that the critical model exhibits exact SL(2,R) invariance, leading to a family of nonlocal 1d CFTs, which are perhaps the simplest CFTs that remain unsolved analytically. After reviewing the history and physics of the model, I will describe our solution of the critical dynamics near p=2. Based on https ://arxiv.org/abs/2412.12243 with D. Benedetti, E. Lauria, and P. van Vliet.*