

# SEMPARIS – Séminaires en région parisienne

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## Forum de Physique Statistique @ ENS

**Mercredi 19 Mars 2025, 12 :45**

LPENS, 3 rue d'Ulm (College de France)

Domaines : cond-mat.stat-mech

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

Orateur : **Dalimil Mazac ( IPHT )**

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.*

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