Séminaire commun

2D black hole sigma models from an integrable spin chain

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DESY

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Résumé

The Lorentzian black hole sigma model and its Euclidean version are CFTs in 1+1 spacetime dimensions that were introduced in the context of string theory. While the quantum Euclidean black hole sigma model is well understood, the definition of the path integral for the Lorentzian one, whose target-space is equipped with a metric of indefinite signature (+1,-1), is unclear. In the talk I will discuss a new approach to the study of the CFTs via the scaling limit of a certain integrable 1D spin chain. Among other things, I will present a recent result for the density of states of the Euclidean black hole sigma model that was obtained from the study of the lattice system. This density of states reproduces the modular invariant partition function constructed in the works of Maldacena, Ooguri & Son and Hanany, Prezas & Troost.