Laboratoire de Physique Théorique et Hautes Energies

Unité Mixte de Recherche (UMR 7589) de Sorbonne Université et du CNRS

SEMINAIRE du LPTHE

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Two-point boundary correlation functions of dense loop models

We investigate six types of two-point boundary correlation functions in the dense loop model. These are defined as ratios Z/Z' of partition functions on the rectangle, with specific choices of the boundary conditions on one edge. For the model of critical dense polymers, we obtain determinant and pfaffian expressions for these correlators. We analyse their critical behavior in the scaling limit and their contribution to the corner free energy via the Cardy-Peschel formula.

Remarkably, the results are in perfect agreement with the CFT predictions, wherein the two-point functions are interpreted as the expectation values of boundary changing conformal fields. In particular, one field of vanishing conformal weight is found to be logarithmic, and inserting it in the corner yields a log(log n) contribution to the corner free energy.

Joint work with Jesper Jacobsen.

Bibliothèque du LPTHE, tour 13/14, 4ème étage

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