

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

Thursday, 11 November 2021, 16:30

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Free fermionic structures in KPZ solvable models

The KPZ equation is a notable example of a stochastic integrable system. Under specific initial conditions its solution takes the form of Fredholm determinants or pfaffians. This a priori surprising fact, suggests deep connections between theories of free fermions and stochastic integrable systems.

In this talk I will develop these connections, presenting a combinatorial theory that allows to match observables of positive temperature free fermions with those of solvable regularizations of the KPZ equation. Advantages provided by this theory are elementary derivations of previously known results, as well as new solutions.

Based on a collaboration with Takashi Imamura and Tomohiro Sasamoto.