

Point-interacting Brownian motions in the KPZ universality class

Herbert Spohn

Zentrum Mathematik,
TU München, Boltzmannstr. 3, D-85747 Garching, Germany
spohn@tum.de

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Tokyo Institute of Technology, Japan*

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We discuss chains of interacting Brownian motions, for which time reversal invariance is broken because of asymmetry in the interaction strength between left and right neighbor. In the limit of a very steep and short range potential one arrives at Brownian motions with oblique reflections. For this model we prove a Bethe ansatz formula for the transition probability and self-duality. In case of half-Poisson initial data, duality is used to arrive at a Fredholm determinant for the generating function of the number of particles to the left of some reference point at any time $t > 0$. A formal asymptotics for this determinant establishes the link to the Kardar-Parisi-Zhang universality class.