

Institute for Applied Mathematics, Bonn University

Oberseminar Stochastik

Thursday, 6 December 2018, 16:30

Lipschitz-Saal (LWK 1.016)

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On shocks in TASEP

The TASEP particle system runs into traffic jams when the initial particle density increases in the direction of flow. It serves as a microscopic model of shocks in Burgers' equation. I will describe work with Jeremy Quastel on a specialization of TASEP, where we identify limiting joint fluctuations of particles around the shock by using determinantal formulae for its correlation functions. The limit is described in terms of Tracy-Widom laws of random matrix theory.