



Seminar/Talk

Cutoff and discrete product structure in ASEP

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We consider the asymmetric simple exclusion process (ASEP) on \mathbb{Z} with an initial data such that in the large time particle density $\rho(\cdot)$ a discontinuity at the origin is created, where the value of ρ jumps from zero to one, but $\rho(-\varepsilon), 1 - \rho(\varepsilon) > 0$ for any $\varepsilon > 0$. We consider the position of a particle x_M macroscopically located at the discontinuity, and show that its limit law has a cutoff under $t^{1/2}$ scaling. Inside the discontinuity region, we show that a discrete product limit law arises, which bounds from above the limiting fluctuations of x_M in the general ASEP, and equals them in the totally ASEP. Sending $M \rightarrow \infty$, the discrete product limit law converges to $\text{FGUE} \times \text{FGUE}$, which was previously observed at shocks in TASEP.

Thursday, February 7, 2019 04:15pm - 06:15pm

Big Seminar room Ground floor / Office Bldg West (I21.EG.101)



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