

PushASEP on the ring, limiting fluctuations

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We develop Bethe Ansatz formulas to analyze the PushASEP on the ring, resulting in relaxation scale fluctuations that interpolate between KPZ and Gaussian statistics. The PushASEP is an interacting particle systems with an exclusion rule when moving in one direction and with a push rule when moving the other direction. We obtain three different representations of the joint probability function: (1) an N -fold contour integral, (2) a 1-fold contour integral, and (3) a summation formula. We are able to perform precise asymptotic analysis by translating between the three different formulas for the joint probability function. In the talk, I will describe the three formulas and their role in the asymptotic analysis.

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