

*Department of Mathematics,
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MATH 288 Probability & Statistics

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Nonequilibrium particle systems in inhomogeneous space

Abstract:

I will discuss stochastic interacting particle systems in the KPZ universality class evolving in one-dimensional inhomogeneous space. The inhomogeneity means that the speed of a particle depends on its location. I will focus on integrable examples of such systems, i.e., for which certain observables can be written in exact form suitable for asymptotic analysis. Examples include a continuous-space version of TASEP (totally asymmetric simple exclusion process), and the pushTASEP (=long-range TASEP). For integrable systems, density limit shapes can be described in an explicit way. We also obtain asymptotics of fluctuations, in particular, around slow bonds and infinite traffic jams caused by slowdowns.

Host: Tianyi Zheng

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10:00 AM

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