

1108-60-170

Leonid Petrov* (lenia.petrov@gmail.com), Department of Mathematics, University of Virginia, 141 Cabell Drive, Kerchof Hall, Charlottesville, VA 22902. *Dynamics of interacting particle systems via spectral properties.*

Many interesting stochastic particle systems are “integrable”, i.e., their distributions and asymptotics can be studied by algebraic methods. I will discuss particle systems on the discrete line whose integrability is triggered by an underlying spectral theory (involving noncommutative Fourier-type transforms). The spectral theory is closely tied with (coordinate) Bethe ansatz. This provides a unified way of obtaining exact distribution formulas with arbitrary initial data for a number of particle systems, including ASEP, q-TASEP, and systems related to the six-vertex model. (Received January 09, 2015)