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Large Deviations for a Tagged Particle in
One-dimensional Symmetric Simple Exclusion

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Recently, starting from certain non-equilibrium initial distributions, a law of large numbers and a central limit theorem, has been proved for a tagged particle in the exclusion model on Z with symmetric nearest-neighbor jump probabilities (Jara–Landim '06). In this talk, we discuss a corresponding large deviation principle, and evaluate the rate function in certain regimes, showing a phase transition.

This is joint work with SRS Varadhan.