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*Quasiparticle dynamics in the hard rod gas and the Toda chain*

It is well known that the hydrodynamics of integrable models can be understood by viewing the system as a gas of quasiparticles. The lecture will discuss the dynamics of individual quasiparticles. In the first part, I will discuss the hard rod gas and present a simple microscopic derivation of quasiparticle statistics. Next, the Dean–Kawasaki formalism will be used to give a phenomenological derivation of fluctuating hydrodynamics of the homogeneous hard-rod gas. In the second part, I will discuss quasiparticle statistics of the Toda chain.