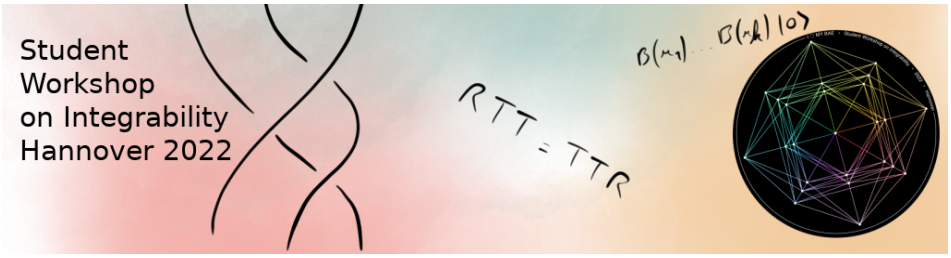

Contribution ID: **5** Type: **40 Min Talk**

Hydrodynamic description of multispecies TASEP

Tuesday, 29 March 2022 12:00 (1 hour)

Exclusion processes in one dimension first appeared in the 70's and have since dragged much attention from communities in different domains: stochastic processes, out of equilibriums statistical physics and more recently integrable systems. While it is well known that the hydrodynamic limit of the single species totally asymmetric simple exclusion process (TASEP) is described by the Burger's equation, much less is known for multispecies generalizations, which present a much richer phenomenology. In this talk we shall present results for a version of the TASEP, containing two species of particles and a hierarchical dynamic depending on two parameters. By using results for the stationary measure of such model on ring domains, we shall formulate the conservations laws associated to the different kind of particles. We show an explicit non-linear decoupling of those equations which allows an in-depth discussion of their solutions (shocks, Riemann problem, etc.). Good agreement is found with numerical simulations.

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Track Classification: Participants Talks: Abstracts of Participants Talks