

Friday, February 24th (at 4.00pm, UK time)

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Title: Dispersive shocks and Hydrodynamic chains in random matrix models.

ABSTRACT

The Toda lattice and the Pfaff lattice represent the integrable discrete structures associated with the deformation of random matrix ensembles, Hermitian and symmetric respectively.

We study the case for which the weight function in the joint probability density function is even, with focus on the thermodynamic limit of the field variables populating the lattice.

In the continuum limit for the Hermitian matrix ensemble a structure resembling a dispersive shock arises. In the symmetric matrix ensemble, the leading order of the continuum limit is a system of infinitely many PDEs, that can be recast in the form of a new integrable hydrodynamic chain..
