

THE BATSHEVA DE ROTHSCHILD SEMINAR ON TOPOLOGY MEETS DISORDER AND INTERACTIONS: PRESENT CHALLENGES, FUTURE PROMISES 27-31 MAY, 2018

RAMON INN MITZPE RAMON

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Non-Equilibrium Dynamics of Many Body Quantum Systems

Natan Andrei

The study of non-equilibrium dynamics of interacting many body systems is currently one of the main challenges of modern condensed matter physics, driven by the spectacular progress in the ability to create experimental systems - trapped cold atomic gases are a prime example - that can be isolated from their environment and be highly controlled. Many of the system so studied are integrable.

I will describe nonequilibrium quench dynamics in several integrable (and also non-integrable) guantum systems in 1-dimension: Interacting Bose gas (Lieb-Liniger model), Heisenberg Spin Chain, Interacting Fermi gas (Gaudin-Yang model) and work in progress on the steady state non-equilibrium currents across a quantum dot (Kondo Impurity coupled to two leads at different chemical potentials.)