



Physical Sciences Seminar

Emergent hydrodynamics in 1d quantum systems

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The study of out-of-equilibrium features of many-body closed quantum systems attracted a lot of attention in recent years, stimulating an impressive sharpening of experimental and theoretical techniques. The one-dimensional world, besides being feasible of experimental engineering, is a rather appealing theoretical lab: integrability allows one to derive exact, non-perturbative, results in strongly correlated systems and it has been understood to give rise to new exotic phases of matter as a result of the long-time dynamics. The recently introduced Generalized Hydrodynamics (GHD) further boosts our understanding of the subject, allowing one to consider the evolution from weakly-inhomogeneous initial states and study transport problems. In this talk, I will introduce the basic concepts of integrability and GHD, describing its most recent extensions to include time-dependent and inhomogeneous interactions. I will mainly focus on the 1d interacting Bose gas, emphasizing the power of the method in describing experimental realizations, and on the XXZ spin chain, where bound-state recombination takes place. In the second case, the correct description of the model requires to go beyond standard GHD.

Tuesday, January 28, 2020 11:00am - 12:00pm

Heinzel Seminar Room / Office Bldg West (I21.EG.101)



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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