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Quench, Hydro and Floquet Dynamics in Quantum Integrable Systems

In recent years, many nonperturbative methods have been developed which allow the calculation of dynamical properties of integrable systems of relevance for experiments among others on magnetic systems and cold atoms. These systems exhibit relaxation and equilibration behaviour which cannot be simply described by traditional textbook methods, and can lead to long-lived non-thermal equilibrium states. This talk will provide an overview of recent research in this area, and introduce recently-discovered methods to treat quenched and driven systems in various experimentally-relevant contexts.