BENEMÉRITA UNIVERSIDAD AUTÓNOMA DE PUEBLA



INSTITUTO DE FÍSICA "Luis Rivera Terrazas"



SEMINARIO "DR. JESUS REYES CORONA"

"Generalized Thermalization in Integrable Lattice Systems"

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Integrable quantum many-body systems, paradigms of exact solvability and mathematical beauty, are now routinely explored in ultracold gases experiments. Control of the effective dimensionality and the degree of isolation in those experiments have allowed access to the quasi-1D regime and long coherence times necessary to realize (nearly) integrable systems and study their quantum dynamics far from equilibrium. During dynamics, the constraints imposed by the non-trivial set of conserved quantities that make such systems integrable generally preclude observables from equilibrating to the traditional thermal expectation values.

In integrable systems, it is natural to describe observables after relaxation by means of an updated (generalized) statistical mechanical ensemble: the generalized Gibbs ensemble (GGE), constructed by maximizing the entropy subject to the constraints imposed by integrability. We review experimental and theoretical results on this topic, and discuss a justification of the GGE based on the generalization of the eigenstate thermalization hypothesis.

Webinario transmitido en la plataforma Google Meet Ingresando <u>meet.google.com/gcw-rafj-fco</u> Viernes 16 de octubre de 2020 13:00 Hrs.