

25th Rencontres Itzykson - Many Body Chaos, Scrambling and Thermalization in Interacting Quantum Systems



ID de Contribution: 11

Type: Non spécifié

Many-body delocalisation as symmetry breaking

mercredi 2 juin 2021 14:40 (40 minutes)

I will give an overview of recent work on minimal models for quantum chaos and many-body localisation. The models are Floquet quantum circuits for lattice spin systems, in which time evolution is generated by unitary gates that couple neighbouring sites. In particular, I will discuss the circumstances in which a version of the so-called diagonal approximation (originally developed for the semiclassical limit in low-dimensional chaotic systems) can be applied to these systems. Within this framework I will show that the many-body delocalisation transition can be seen as a form of symmetry breaking transition, having many of the features generally associated with conventional phase transitions in classical statistical mechanical models. Joint work with Sam Garratt: [arXiv:2008.01697](https://arxiv.org/abs/2008.01697) and [arXiv:2012.11580](https://arxiv.org/abs/2012.11580)

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