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



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Quantum gravity meets statistical physics

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Recent work on quantum gravity has revealed deep connections with subjects like quantum information, statistical physics and quantum chaos. In particular, low-energy effective field theories that include gravity turn out to have more access to high-energy degrees of freedom than their non-gravitational Wilsonian counterparts. While precise microscopic high-energy information is inaccessible, certain statistical high-energy information does manifest itself in an interesting way at low energies. I will describe some recent work trying to make this connection more precise, and explain how it connects to issues like wormholes, averaging over theories and the black hole information paradox.

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