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Forum de Physique Statistique @ ENS

Mercredi 8 Avril 2020, 14 :30
LPENS, https ://zoom.us/j/851050904(Join the seminar via zoom : https ://zoom.us/j/851050904)
Domaines : cond-mat.stat-mech

Titre : *Scrambling in Nonlocal Random Quantum Circuits*

Orateur : **Lorenzo Piroli (Max-Planck-Institute of Quantum Optics)**

Résumé : *I will give an overview of recent results in the study of quantum chaos in random unitary quantum circuits. After providing the main motivations coming from high-energy physics, I will introduce the concepts of out-of-time ordered correlators (OTOCs) and of tripartite information as measures of scrambling of quantum information. I will then focus on the study of nonlocal random circuits, and discuss a method to obtain numerically exact results for large system sizes. I will finally present a detailed study of two particular systems : a Brownian SYK model of all-to-all-interacting Majorana fermions, and a random circuit model for black hole evaporation, focusing on the most interesting physical aspects.*

Talk based on : C. Sünderhauf, L. Piroli, X.-L. Qi, N. Schuch, and J. I. Cirac, J. High Energ. Phys. 38 (2019) L. Piroli, C. Sünderhauf, and X.-L. Qi, arXiv :2002.09236 (2020)
