Institut Henri Poincaré
11 rue Pierre et Marie Curie, 75231 Paris cedex 05
String Theory in Greater Paris

Rencontres Théoriciennes
“Supergravité, théorie des cordes et théorie M”

Jeudi 2 Décembre 2021, 10:00

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Multi-trace correlators in the SYK model and Non-geometric wormholes

We consider the global fluctuations in the density of states of the SYK model, which are much larger than the standard RMT correlations. We provide a diagrammatic description of their leading and subleading behavior. In either case, the new set of correlations are not associated with (and are much larger than) the ones given by topological wormholes, and hint towards the dual of a single realization. In particular, we suggest that incorporating them in the gravity description requires the introduction of new, lighter and lighter, fields in the bulk with fluctuating boundary couplings.

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