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Towards a Swampland Global Symmetry Conjecture

Wednesday, March 17, 2021 10:30 AM (1 hour)

Given that exact global symmetries are forbidden by quantum gravity, it is natural to expect that bounds on the quality of approximate global symmetries exist. So far, holographic arguments have only been provided for the former claim. I will discuss a classification of approximate global symmetries and describe a simple argument, based the Weak Gravity Conjecture, for a quantitative bound on the sub-class of "gauge-derived" global symmetries. This has intriguing relations to wormhole-based arguments, which I will also present. I will end with a brief discussion of the fundamental problems associated with euclidean wormholes and of some recent developments in this context.

45' talk + 15' discussion

Presenter: HEBECKER, Arthur