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(Higher-)spinning at the Edge of the Swampland

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The study of low-energy theories that can be embedded into string theory has led to a number of proposals about the nature of quantum gravity. In turn, these ideas have implications for conformal field theories through holography. For instance, the CFT Distance Conjecture posits that at infinite-distance points of a conformal manifold, there is an infinite tower of conserved higher-spin currents, indicating that a sector of the CFT becomes free, and vice versa. I will argue that under a natural set of assumptions, such as unitarity and the existence of a stress-energy tensor but without requiring the presence of supersymmetry, it is possible to prove that all points with such a tower of higher-spin currents are at infinite distance.

Summary

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