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Hyperbolic Field Space and Swampland Conjecture for DBI Scalar

Thursday, 5 December 2019 13:30 (15 minutes)

We study a model of two scalar fields with a hyperbolic field space and show that it reduces to a single-field Dirac-Born-Infeld (DBI) model in the limit where the field space becomes infinitely curved. We apply the de Sitter swampland conjecture to the two-field model and take the same limit. It is shown that in the limit, all quantities appearing in the swampland conjecture remain well-defined within the single-field DBI model. Based on a consistency argument, we then speculate that the condition derived in this way can be considered as the de Sitter swampland conjecture for a DBI scalar field by its own. We also propose an extension of the de Sitter swampland conjecture to the P(X) theories with more general scalar field. [arXiv: 1905.10950]

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Session Classification: Short talks