Contribution ID: **99**   Type: **not specified**

Instantons and Infinite Distances

Thursday 27 June 2019 15:45 (15 minutes)

We consider geodesics of infinite length in the (classical) hypermultiplet moduli spaceof type II Calabi-Yau compactifications. When approaching such infinite distance points, a large amount of D-instantons develop an exponentially suppressed action ,substantially modifying the moduli space metric. In the corrected metric the path length becomes finite, although the metric at its endpoint remains singular. The instanton effects also modify the 4d Planck mass such that, in order to keep it finite, the string scale has to be lowered. Our results can be translated, via the c-map, to the physics around points of infinite distance in the vector multiplet moduli space where the Swampland Distance Conjecture and the Emergence Proposal have been discussed, and provide further evidence for them.

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Session Classification: Parallel Session