

NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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Semi-stable Degenerations and the Distance Conjecture in F-theory

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We analyze infinite-distance limits in the complex structure moduli space of six-dimensional F-theory, giving an algebro-geometric classification and a physical interpretation. From the point of view of the Swampland Program, the motivation is to understand the fate of open-moduli infinite-distance limits in relation with the Distance Conjecture. From an F-theory perspective, the infinite-distance limits correspond to suitable non-minimal singularities in codimension one and higher. While codimension-two finite-distance non-minimal singularities have been understood as SCFTs in a major classification effort, the goal of our analysis is to elucidate the meaning of the infinite-distance codimension-one and codimension-two non-minimal singularities. We argue that they are either decompactification or emergent string limits in a dual sense.

Summary

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