

Emergent Strings in type IIB limits of Type IIB String Theory

Thursday 10 July 2025 15:30 (17 minutes)

We discuss the realization of the Emergent String Conjecture in certain infinite distance limits in the vector multiplet moduli space of Type IIB compactifications on Calabi-Yau threefolds. We establish the existence of a critical tensionless string corresponding to a heterotic string on $T^2 \times K3$, in limits of type IIB that correspond to so-called Tyurin degenerations. We do so by combining the properties of the low-energy effective theory as captured in terms of the underlying limiting mixed Hodge structure, as well as the precise geometric degeneration of the Calabi-Yau threefold as described in terms of the underlying geometric mixed Hodge structure.

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