## The Swampland Distance Conjecture for Kähler moduli and emergence

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The Swampland Distance Conjecture (SDC) states that an infinite tower of modes becomes exponentially light when approaching a point at infinite distance in moduli space. At the large volume singularities of the Kähler moduli spaces of Calabi-Yau threefold compactifications, we use the monodromy matrices to explicitly construct the towers of states satisfying the SDC, which consist of charge orbits of D2-D0 bound states. We further focus on the case where the CY is elliptically fibered, in which case the modular symmetry of the moduli space allows to transfer the orbits to the small fiber regime. In M-theory compactifications, which are dual to F-theory compactifications including an extra circle, some orbits always correspond to Kaluza-Klein towers along that circle. Integrating them out yields an infinite distance in the moduli space, adding support to the emergence proposal. More generally, we show that the exponential mass behavior and the infinite field distance are automatic consequences of integrating out any tower of states up to the species scale, as long as the tower gets compressed as we move in the moduli space.

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