

Quasicrystalline string landscape

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I will discuss string compactifications whose charge lattices admit quasicrystalline symmetries. Quotienting by these symmetries gives backgrounds with frozen parameters, addressing a common source of instabilities in string compactifications. These backgrounds also have large discrete quantum symmetries that defy geometric intuition. I will survey examples in several spacetime dimensions, and then highlight a four-dimensional non-supersymmetric construction. Its spectrum is tachyon-free with chiral fermions and a single neutral scalar. These features make it a rare laboratory for non-supersymmetric string theory, showing how quasicrystals can help overcome some of the main obstacles to building realistic four-dimensional models.