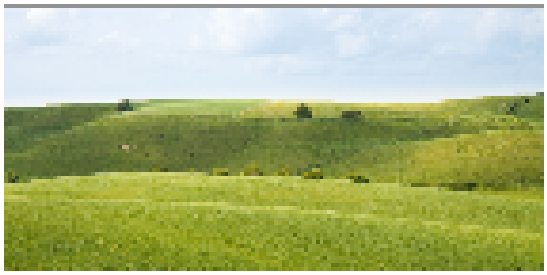

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A new landscape of orientifold vacua

mercredi 11 décembre 2019 14:20 (40 minutes)

A consistent O3/O7 orientifold of type IIB string theory is the starting point for KKLT constructions of de Sitter vacua. I will present a vast landscape of such orientifolds that descends from the famous set of complete intersection Calabi-Yau's (CICY). I will present distributions of topological data relevant for phenomenology such as the splitting of Hodge numbers, the D3 tadpole, and multiplicities of O3 and O7 planes. Somewhat surprisingly, almost all of these orientifolds have conifold singularities whose deformation branches are projected out by the orientifolding. However, they can be resolved, so most of the orientifolds actually descend from a much larger and possibly new set of CY threefolds that can reached from the CICYs via conifold transitions. Finally, we observe an interesting class of N=1 geometric transitions involving colliding O-planes similar to another class that has previously been described in the literature.

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