Obstructions to degeneration limits of Type II orientifolds

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Abstract

Motivated both by the search for universal behaviour in quantum gravity and by the goal of identifying regimes of parametric computational control, asymptotic regions of the moduli space have received substantial attention in recent years. However, especially in the context of minimal supersymmetry, quantum corrections to the classical effective action can severely modify and even completely remove naive infinite directions in the moduli space. We will study this surprising and potentially far-reaching effect in the context of 4d N=1 Type II orientifolds. A special focus of this talk is on quantum obstructions in the string coupling for infinite distance limits in the Type IIB complex structure moduli as revealed by their uplift to F-theory. This explicit analysis complements other, both direct and indirect, techniques to identify the asymptotic regions in the quantum corrected moduli space.

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