Form field theory on Calabi–Yau three-fold

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Abstract

We show how the natural Abelian duality of 2 and 3-form gravity theories on seven-dimensional manifold $CY_3 \times S^1$ leads to an S-duality between 2 and 3-form theories on simply connected CY_3. The massless sector of the 2-form field theory on CY_3 corresponds to the A model string field theory. We discuss the complex structure independence of the 2-form theory for a general Kähler manifold and derive the holomorphic anomaly equations for simply connected CY_3.

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