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*The Donaldson–Thomas and Gromov–Witten theory of orbifolds and their resolutions*

There are two primary theories of “curve counting” on a Calabi–Yau threefold, Donaldson–Thomas theory and Gromov–Witten theory. Both theories extend to Calabi–Yau orbifolds. A three dimensional Calabi–Yau orbifold  $X$  has a canonical Calabi–Yau resolution  $Y$ . The four curve counting theories  $DT(X)$ ,  $DT(Y)$ ,  $GW(X)$ , and  $GW(Y)$  are expected to be equivalent. We give an overview of these theories and conjectural equivalences.