F-Theory on singular spaces

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Abstract

I will review the new approach to F-theory compactifications pioneered in Arxiv:1410.4867. According to it, instead of resolving or deforming the singularities of the internal space, one can extract physically relevant information by adding more structure to the singular space itself. This new perspective also allows to treat more exotic brane configurations, such as T-branes. The mathematical framework in which the approach is formulated is known as Eisenbud '92s matrix factorizations. I will present an affine example of how this works, as well as a global, compact one.