

Fourier–Mukai and Nahm
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A new perspective on an example
of Vafa and Witten

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Abstract

In their 1994 paper “*On Orbifolds with Discrete Torsion*”, Vafa and Witten posed the question of explaining certain singularities that appeared in the geometry of some spaces naturally related to physics models, which from the physics point of view appeared to be smooth. I shall present first a low-tech solution to their question, which involves relative Fourier-Mukai transforms along elliptic fibrations, and then discuss the new point of view on this story, which involves the theory of Homological Projective Duality of Kuznetsov.