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Kahler moduli stabilization in magnetized orbifold models

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We study Kahler moduli stabilizations in semi-realistic magnetized D-brane models based on $Z_2 \times Z_2$ toroidal orbifolds. In type IIB compactifications, 3-form fluxes can stabilize the dilaton and complex structure moduli fields, but there remain some massless closed string moduli fields, Kahler moduli. The magnetic fluxes generate Fayet-Iliopoulos terms, which can fix ratios of Kahler moduli. On top of that, we consider D-brane instanton effects to stabilize them in concrete D-brane models and investigate the brane configurations to confirm that the moduli fields can be stabilized successfully. We find suitable configurations where the D-brane instantons can stabilize the moduli fields within both types of D-brane models, explaining an origin of a small constant term of the superpotential which is a key ingredient for successful moduli stabilizations.

Presentation type

Parallel talk

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