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Axion Potentials and Moduli Stabilization in Realistic Heterotic M-Theory

Wednesday, 4 June 2025 10:00 (1 hour)

A brief review of the observable sector of the B-L MSSM heterotic M-theory is presented. A specific hidden sector involving an anomalous
holomorphic line bundle is analyzed and the associated Green-Schwartz mechanism, axions and D-term potential are discussed. The complex structure flux, gaugino condensation and string worldsheet superpotentials are analyzed and the associated F-term potential constructed. This is used to analyze the axion potential and vacuum state and then to study the potential for the Kahler moduli. It is shown to admit physically acceptable stable vacuum states, with both AdS and deSitter vacua for varying values of input parameters. The F-term potential energy is proven to satisfy the the Transplanckian Censorship Conjecture.

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