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Navigating the T-Duality Landscape of Little String Theories

Thursday 10 July 2025 14:24 (17 minutes)

In this talk, we explore the phenomenological potential of heterotic line bundle models as a promising framework for deriving the Standard Model from string theory. We present a systematic approach to constrain the low-energy effective theories derived from such compactifications using remnants of anomalous U(1) symmetries to retrieve realistic quarks and leptons masses, mixing patterns and light Higgs. We show that these features emerge in specific regions of moduli space, where vacuum expectation values of geometric moduli and bundle singlets eventually align to suppress unwanted
-parity violating couplings. This work underscores the viability of heterotic line bundle models as a pathway to connecting string theory with observable particle physics.

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