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Four-dimensional string compactifications with D-branes, orientifolds and fluxes

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Abstract

This review article provides a pedagogical introduction into various classes of chiral string compactifications to four dimensions with D-branes and fluxes. The main concern is to provide all necessary technical tools to explicitly construct four-dimensional orientifold vacua, with the final aim to come as close as possible to the supersymmetric Standard Model. Furthermore, we outline the available methods to derive the resulting four-dimensional effective action. Finally, we summarize recent attempts to address the string vacuum problem via the statistical approach to D-brane models.

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Contents

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