

A (non-)worldsheet description of string backgrounds

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For string backgrounds with known exact worldsheet theory descriptions, ordinary string perturbation theory can be employed to study their observables such as string spectrum and scattering. However, many of interesting string backgrounds, including AdS and flux compactifications, lack such descriptions, posing challenges in understanding their stringy physics. Since these backgrounds are typically described as solutions to low-energy supergravity theory, having a string-theoretic counterpart to this field theory is desirable. In this talk, we discuss how string field theory provides such a framework, along with its limitations. Despite such limitations, we illustrate its practical utility in examining physical observables, particularly in examples such as AdS and flux compactifications.

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