

Path integrals of perturbative strings on all the curved backgrounds from string geometry theory and a potential energy of the backgrounds

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One perturbative string theory is defined on one fixed background. On the other hand, it is necessary that a non-perturbative formulation of string theory includes all the perturbatively stable vacua and perturbative string theories on various curved backgrounds are derived from the single theory. In this talk, we derive perturbative string theories on all the curved backgrounds from the fluctuations around fixed backgrounds in a single string geometry theory, which is one of the candidates of the non-perturbative formulation of string theory. Furthermore, we can define a potential energy of the backgrounds because they do not depend on the string geometry time. A background can be determined by minimizing the energy. Because this mechanism does not depend on supersymmetry, we can study general compactifications. We discuss this application to string phenomenology.

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