

Séminaire des doctorants du LPTHE

Thursday, April 6th, 2:30pm
Library of LPTHE

UV divergences of supergravity theories ;
an introduction to the string theoretical approach.

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In this talk I will review how string theory can be used to compute scattering amplitudes in field theory and in particular why it is an excellent tool to understand their UV behavior. I will explain the concept on the example of one loop amplitudes, giving explicit and non-technical computations. I shall come to the case the non-renormalisation theorems in heterotic string that apply to N=4 supergravity four gravitons amplitudes (with or without matter) to sketch the demonstration of the vanishing of a previously expected 3-loop divergence. I will conclude with an overview of the current state of art in the hunt for supergravity UV divergences.

This talk is intended to be pedagogical and self contained. It requires no knowledge of string theory.