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Soft factors and interaction vertices from light-cone actions

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In gauge theories and gravity, the scattering amplitudes of any number of external particles under the soft limit reduce to amplitudes with one less number of external particles times a universal soft factor. Higher-order interaction vertices (or scattering amplitudes) in a theory can be built up from the lower-order vertices (amplitudes) by using a multiplicative universal factor associated with the emission of a soft boson.

In this talk, I will first, for example, explain how universal soft factors for Yang-Mills theory and gravity can be extracted from their respective light-cone actions and how to construct higher point interaction vertices using the soft factor. I will then discuss soft theorems in the context of maximally supersymmetric field theories and explain the construction of interaction vertices of N = 8 supergravity.

Session

Formal Theory

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