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JOHANNES GUTENBERG
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Theorie-Palaver

Nov. 28, 2023 at 2 p.m.
Lorentz room (Staudingerweg 7, 5th floor)

Stefano De Angelis
IPhT, Saclay

EFT matching from analyticity and unitarity of scattering amplitudes

In the first part of the seminar, I will review some recent progress made using modern on-shell techniques to understand (relativistic) EFTs and uncover hidden structures, with a particular focus on the SMEFT (from a purely on-shell construction of EFTs to selection rules in cross-section and RG equations). Motivated by this recent progress, in the second part, I will present a new on-shell formula for the matching of ultraviolet models featuring massive states onto their massless effective field theory. This formula is based on a dispersion relation in the space of complex momentum dilations to capture, in a single variable, the relevant analytic structure of scattering amplitudes at any multiplicity.

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