

Modern Techniques for Multi-Scale Loop Amplitudes

Wednesday, 26 October 2022 17:00 (30 minutes)

Scattering amplitudes provide theoretical descriptions of the hard interactions taking place at collider experiments. In practice, their computation must be performed within the confines of perturbation theory, to the appropriate order of approximation demanded by experiment. When considering interactions that involve many, possibly heavy particles, the computation of the associated scattering amplitude becomes demanding. In this talk, we discuss the problems involved in frontier multi-scale amplitude computations – at the two-loop level – and the modern techniques which are currently used to tackle them. We will discuss the state of the art at contemporary hadron colliders, and prospects for computations at future lepton colliders.

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Session Classification: QCD