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Particle Theory Seminar of LPT Orsay

Jeudi 22 Fevrier 2018, 16 :00
LPT, 114
Domaines : hep-ph

Titre : *Algebraic geometry applied to multi-loop scattering amplitudes*

Orateur : **Kasper Larsen (Southampton University)**

Résumé : *The computation of two-loop amplitudes forms a current bottleneck to computing precision- level cross sections for LHC phenomenology. In this talk I will discuss several new methods for analytic evaluation of two-loop amplitudes, drawing inspiration from algebraic geometry and modern unitarity. More specifically, the methods involve efficient determination of a basis of integrals in terms of which the amplitude is decomposed ; derivation of the integral identities needed to perform the decomposition ; and evaluation of the basis integrals via differential equations. The first step of determining a basis of integrals has been implemented in the publicly available code Azurite which I will discuss. I will also discuss future implementations of the methods and their application to computing the two-loop five-gluon QCD amplitude.*
