Organisé conjointement par
CPHT-École Polytechnique et Groupe Théorie IPN Orsay

SÉMINAIRE de PHYSIQUE des PARTICULES

Kasper Larsen

(Southampton U.)

Algebraic geometry applied to multi-loop scattering amplitudes

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.

Mardi 20 Fevrier 2018

11:00

Salle de conférences Louis Michel, bât. 6