Institut Henri Poincaré

11 rue Pierre et Marie Curie, 75231 Paris cedex 05

String Theory in Greater Paris

Rencontres Théoriciennes

"Supergravité, théorie des cordes et théorie M"

Jeudi 25 Janvier 2024, 13:45

Andrea Guerrieri

Perimeter

A Bootstrap bridge between Gravity and QCD

The numerical S-matrix Bootstrap establishes non-perturbative universal bounds on physical observables extracted from scattering amplitudes in any dimension. In this talk, I will review three results : rigorous model-independent bounds on Higgs couplings, the precise determination of the physical QCD spectrum from the Bootstrap, and no-go theorems for supersymmetric Quantum Gravity. These results are possible by going beyond the positivity of scattering amplitudes, including the non-linear unitarity inequalities. Taming the non-linear unitarity constraints requires both an analytic and technological effort. During the discussion, I will describe the Bootstrap methodology and the numerical challenges we face when tackling these problems. I will conclude with a list of possible future directions that are interesting for the development of the field.

Institut Henri Poincaré, salle 314, 3ème étage

Retrouvez les activités de la communauté parisienne de théorie des cordes sur
`http ://string.lpthe.jussieu.fr`
La liste de tous les séminaires en région parisienne est disponible sur
`http ://string.lpthe.jussieu.fr/semparis`