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 21 Septembre 2017, 11:45

Miguel Paulos

LPTENS

The S-matrix strikes back

In this talk I will describe recent work aiming to reinvigorate the 50 year old S-matrix program, which seeks to constrain scattering of massive particles non-perturbatively. I will begin by considering quantum fields in anti-de Sitter space and show that one can extract information about the S-matrix by considering correlators in conformally invariant theories. The latter can be studied with "bootstrap" techniques, which allow us to constrain the S-matrix. I will also show that this can be done directly, without using the CFT crutch, by using crossing symmetry and unitarity and a particular ansatz. In this way we derive universal bounds on QFTs in 2,3 and 4 dimensions.

Institut Henri Poincaré, salle 314, 3ème étage