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 14 Mars 2024, 10:00

António Antunes

DESY

The conformal bootstrap reaches higher points

The conformal bootstrap is a robust tool for the non-perturbative study of conformal field theories (CFTs) making use unitarity and crossing of simple four-point correlation functions. However, not all observables are accessible in this setup and it is not clear whether a theory can be determined uniquely through these constraints. Higher-point correlation functions of simple operators contain information about an infinite number of four-point correlators with complicated operators, and can potentially address the aforementioned problems. In this talk, I will discuss recent progress in generalizing the bootstrap program to higher-point functions, with emphasis on a positive semi-definite numerical setup for the six- point crossing equation in one dimension. Despite the drastic simplifications with respect to higher dimensions, the problem retains its infinite nature, which we are able to address, obtaining non-trivial bounds on scaling dimensions and four-point functions at fixed kinematics.

Institut Henri Poincaré, salle 314, 3ème étage