

# SEMPARIS – Séminaires en région parisienne

<http://string.lpthe.jussieu.fr/semparis/>

## Séminaires cette semaine dans la série RENC-THEO

**Jeudi 21 Septembre 2017, 10 :00**

IHP, Room 314

Rencontres Théoriciennes

Domaines : hep-th

Titre : *Quantum gravity from conformal field theory*

Orateur : **James Drummond** ( **Southampton University** )

Résumé : *I will describe how to recast perturbative quantum gravity using non-perturbative techniques from conformal field theory, focussing on the case of  $N=4$  super Yang-Mills theory. By resolving the degeneracy among double trace operators at large  $N$  we are able to bootstrap one-loop supergravity corrections from the OPE of the CFT.*

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**Jeudi 21 Septembre 2017, 11 :45**

IHP, Room 314

Rencontres Théoriciennes

Domaines : hep-th

Titre : *The S-matrix strikes back*

Orateur : **Miguel Paulos** ( **LPTENS** )

Résumé : *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.*

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