

**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 2019, 11:40*

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**Bootstrapping Multiple Scattering Amplitudes**

*The S-matrix Bootstrap approach can be used to derive bounds on the coupling constants on any Lorentz invariant quantum field theory due to analyticity, crossing symmetry and unitarity. In our previous work, constraints were derived by studying only the 2-to-2 scattering of the lightest particle of the theory. I will describe the extension of our techniques in order to include constraints stemming from 2-to-2 processes which involve the next-to-lightest particle of the theory. We test these techniques on a family of 1+1 dimensional theories inspired by (and including) the three state Potts field theory. We find that the inclusion of more 2-to-2 amplitudes significantly reduces the single amplitude bounds.*

**Institut Henri Poincaré, salle 314, 3<sup>ème</sup> étage**

Retrouvez les activités de la communauté parisienne de théorie des cordes sur  
<http://string.lpthe.jussieu.fr>  
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