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 13 Juin 2024, 10:00

Tianli Wang

Harvard

A CFT Dual for Celestial MHV Amplitudes

I will talk about a 2d CFT dual we constructed for 4d gluon MHV amplitudes in flat space, based on the papers 2403.18896 and 2312.07820. I will start with reviewing relevant aspects of celestial holography, in particular, the challenges of understanding the role of translation invariance in the CFT dual. Then I will discuss the central object in my talk, leaf amplitudes, which are smooth functions that bridge usual (singular) flat space amplitudes and our simple CFT dual. I will then introduce the CFT dual, whose correlators reproduce gluon MHV amplitudes. It comprises two sectors, one with free fermions that give a current algebra, the other being Liouville theory. The key step is to show correlators of light operators in the semiclassical limit of Liouville theory are scalar contact Witten diagrams.

Institut Henri Poincaré, salle 314, 3ème étage

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