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Computing (Anti)-de Sitter Graviton Function through Generalized On-Shell Recursion Relation

Thursday 29 June 2023 15:20 (20 minutes)

I will focus on the computation of graviton function in (Anti)-de Sitter space, specifically concentrating on gravitons with all positive external helicity. To tackle this problem, I will introduce a generalized recursion method inspired by the BCFW (Britto-Cachazo-Feng-Witten) technique. This method involves a deforming of the external momentum of the graviton function by complexifying it and does not require Feynman-Witten diagrams. The main emphasis of my talk will be on the calculation of four graviton of all plus helicity in three-dimension, utilizing the three-dimensional spinor helicity formalism. The final result will be obtained by summing the residues of physical poles. Additionally, I will highlight the implications of this research for the cosmological bootstrap program. Finally, I will discuss future directions of research, including the computation of higher point expressions.

Author: Dr KHAREL, Savan

Co-author: Dr ALBAYRAK, Soner

Presenter: Dr KHAREL, Savan

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