



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

A Mellin-Barnes Approach to Scattering in de Sitter Space (Zoom Seminar)

Charlotte Sleight

(IAS)

Date: August 4, 2020

Time: 4.30 pm IST

Zoom link shall be shared separately



The last decade has seen significant progress in our understanding of scattering in anti-de Sitter (AdS) space. Through the AdS/CFT correspondence, we can reformulate scattering processes in AdS in terms of correlation functions in Conformal Field Theory (CFT), which are sharply defined by the requirements of Conformal Symmetry, Unitarity and a consistent Operator Product expansion. Accordingly, numerous highly effective techniques for the study of scattering in AdS have been developed, in particular within the Conformal Bootstrap programme. In this talk I will describe some simple steps towards extending some of these techniques and results to boundary correlators in de Sitter (dS) space. Compared to AdS, we have little grasp of the properties required of consistent correlation functions in Euclidean CFTs dual to physics in dS. I will show how boundary correlators in AdS and dS can be placed on an equal footing by adopting a Mellin-Barnes representation in momentum space, potentially providing a framework that facilitates bridging the gap between the Conformal and Cosmological bootstrap programmes. I will then discuss how the Mellin-Barnes representation itself can be a useful tool to study boundary correlators both in AdS and dS.