

Hilbert space and unitarity in celestial and carrollian holography

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So far, celestial and carrollian holography have mostly been concerned with a CFT-like reformulation of standard scattering theory. What are the basic principles that these exotic CFTs must obey, and in particular, what is the fate of unitarity? In this talk, I aim to clarify common misconceptions regarding the representation theory underlying celestial and carrollian holography. I will describe the Hilbert space from the perspective of the Lorentz group, in terms of unitary representations of the principal continuous series and of the exceptional discrete series. Implications for a bootstrap formulation of celestial and carrollian CFTs will be discussed.