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Celestial holography on Kerr-Schild backgrounds

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The four-dimensional flat space S-matrix takes the form of a two-dimensional correlation function on the celestial sphere when changing from an asymptotic energy- momentum to a boost basis. This motivates the conjecture that quantum gravity in asymptotically flat spacetimes is dual to a co-dimension two celestial CFT. In this talk we test this celestial holography proposal for non-trivial asymptotically flat backgrounds of Kerr-Schild type which include the Coulomb field of a static and spinning charge, the Schwarzschild and Kerr geometry as well as electromagnetic and gravitational shockwaves.

Presenter: PUHM, Andrea