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Penrose Limit: A Stringy Regime in Holography

Tuesday, 23 November 2021 11:00 (30 minutes)

Penrose limit provides a promising avenue to the stringy regime in the AdS/CFT holography, giving rise to the pp-wave background. Recently, we proposed a novel entry of the pp-wave holographic dictionary, which equated the Berenstein-Maldacena-Nastase (BMN) two-point functions in free Yang-Mills theory with the norm squares of the quantum unitary transition amplitudes between the corresponding tensionless strings in the infinite curvature limit. If our proposal is correct, it would not only provide first examples of systematic calculations of the higher genus critical superstring amplitudes, but may also in principle gives exact complete results for any string coupling, due to the convergence of genus expansion.

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