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# Simplicity of Mellin amplitudes for $AdS_3 \times S^3$

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## Abstract

The spectrum of half-BPS single-particle operators of the D1-D5 system in the supergravity regime is dual to the spectrum of Kaluza-Klein modes of tensor and graviton multiplets in  $AdS_3 \times S^3$ . We present simple formulae for all four-point tree-level correlators of scalar half-BPS primary operators in the spectrum, and in particular, we bootstrap the four-point correlator of the graviton multiplet for all KK levels. A key insight of our approach is the use of generalized Mellin space, and a decomposition of the correlators into distinct subsectors each one characterized by different on-shell constraints among the Mellin variables. The resulting Mellin amplitudes involve a small set of building blocks with manifest properties under a six-dimensional symmetry.

