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Two loop five point integrals: light, heavy and large spin correlators.

Thursday 18 January 2024 12:00 (30 minutes)

We evaluated all conformal integrals appearing in the two-loop five-point functions of protected operators in $\mathcal{N} = 4$ Super Yang-Mills in two kinematical regimes. From the correlation function of the lightest operators of the theory we were able to extract structure constants of one and two spinning operators for small values of polarizations and arbitrary spin. We conjectured a universal all loop behavior of these structure constants and commented on the subtleties of analytically continuing it from finite to large spin. We also consider correlation functions of heavier operators that get factorized in the so-called decagon. We fixed this object in general kinematics at two-loops and studied its physical properties under OPE and null limits

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