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Correlators in N=4 SYM at weak and strong coupling

Wednesday 5 September 2018 15:30 (45 minutes)

I will give an overview of what is known about 4 point correlators of half BPS operators in N=4 SYM both at weak and strong coupling. At weak coupling - in the planar limit - the integrands are known explicitly to 10 loops and give combinations of amplitude integrands at any number of points. It is conjectured that all information needed to extract all n-point l-loop amplitudes is contained in the four-point correlator. These (and higher point) integrands are conjectured to be equivalent to a geometric object the "correlahedron". At strong coupling the correlators are dual via AdS/CFT to graviton amplitudes in IIB string theory on AdS_5 x Sˆ5. We bootstrap these supergravity amplitudes at 1 loop, using recently found tree-level amplitudes, via OPE techniques on the dual CFT side.

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