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Remarks about integrated correlators in N=4 and N=2 SYM superconformal theories in d=4

Wednesday, May 22, 2024 10:45 AM (1 hour)

Localization allows to compute via a matrix model integrated forms of correlators, such as a 4-point function or a two-point function in presence of a defect, whose coordinate dependence is not fixed by conformal symmetry. These correlators are interesting as they holographically dual to scattering processes in AdS5 and the integrated results extend the data for a bootstrap reconstruction. In this talk I will focus on two topics. The first one regards the integrated two-point functions in presence of a Wilson line defect in the N=4 theory. Following 2308.16575 (M.B, Frau, Galvagno, Lerda) I will discuss how the Defect CFT constraints and the Ward identities of the preserved supersymmetries determine the measure of integration and I will rephrase their localization computation (already given in 2305.08297) in the so-called "full Lie algebra" approach. This technique is well suited for extending the discussion to $N = 2$ superconformal theories and my second topic will be the matrix model computation of integrated 4-pt correlators in a specific N=2 superconformal YM theory called E-theory; this part is based on 2311.17178 with Frau, Lerda, Pini.

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