

NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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Broken global symmetries and defect conformal manifolds

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I will present the collaborative work arXiv:2203.17157 with Nadav Drukker and Georgios Sakkas. Defects that break the global symmetry group provide some exactly marginal defect operators, which allow to deform a CFT along the defect conformal manifold, which is the symmetry breaking coset. Its Zamolodchikov metric is expressed as the 2-pt function of the exactly marginal operators and the Riemann tensors can be expressed as integrated 4-pt functions. We examine in detail the case of the 1/2 BPS Maldacena-Wilson loop in $\mathcal{N} = 4$ SYM, the 1/2 BPS surface operator of the 6d $\mathcal{N} = (2, 0)$ theory, the 1/2 BPS Fermionic Wilson loop in ABJM, and the magnetic line in the $O(N)$ model.

Summary

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