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Type B anomalies (Mis-)Matching

Tuesday, 3 November 2020 14:30 (1 hour)

In this talk we analyse several aspects related to type B conformal anomalies associated with Coulomb branch operators in 4d \mathcal{N}=2 SCFTs. In particular, when the vacuum preserves the conformal symmetry, these anomalies coincide with the two point function coefficients in the Coulomb branch chiral ring. We analyse the behaviour of these anomalies on the Higgs branch, where conformal symmetry is spontaneously broken. We review the argument developed in arXiv 1911.05827 [hep-th] and, following it, we argue that these anomalies are covariantly constant on conformal manifolds. In some cases this can be used to show that the anomalies match in the broken and unbroken phases. Then, in the second part of the talk, we focus on some specific 4d \mathcal{N}=2 SCFTs and we test type B anomaly (Mis-)Matching through an explicit Feynman diagram computation. We finally observe that an implication of Type B anomaly Mismatching is the existence of a second covariantly constant metric on the conformal manifold that imposes restrictions on its holonomy group.

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