

Title: Equivariant Localization in Factorization Homology and Vertex Algebras from Supersymmetric Gauge Theory

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Abstract: I will discuss recent developments in describing the chiral algebras associated to 4d $N=2$ theories introduced by Beem et al. in terms of Omega backgrounds, and give a description of the class S chiral algebras following this perspective, in terms of boundary conditions, interfaces, and junctions in 4d $N=4$ SYM.

Then, I will present work in progress on a general TFT-type procedure for calculating the factorization algebras describing 2d CFTs which arise as compactifications of such configurations. I will show that this method correctly computes the class S chiral algebras, matching the construction of Arakawa, and discuss potential applications to computing the vertex algebras associated to toric divisors in toric CY3s, following Gaiotto-Rapcak.

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