Contribution ID: **267** Type: **not specified**

Comments on Non-invertible Symmetries in Argyres-Douglas Theories

Wednesday 27 September 2023 16:00 (18 minutes)

I briefly demonstrate the presence of non-invertible symmetries in an infinite family of superconformal Argyres-Douglas theories. This class of theories arises from diagonal gauging of the flavor symmetry of a collection of multiple copies of $D_p(SU(N))$ theories. The same set of theories that we study can also be realized from 6d $\mathcal{N} = (1, 0)$ compactification on a torus. The main example in this class is the (A_2, D_4) theory. We show in detail that this specific theory bears the same structures of non-invertible duality and triality defects as those of $\mathcal{N} = 4$ super Yang-Mills with gauge algebra ⊠(2). The result can be extended to infinitely many other Argyres-Douglas theories in the same family, including those with central charges $a = c$ whose conformal manifold is one dimensional, and those with $a \neq c$ whose conformal manifold has dimension larger than one. Our result is supported by examining certain special cases that can be realized in terms of theories of class $\mathcal{S}$.

Summary

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Session Classification: Parallel Session Wednesday: Strings / Mathematicals Physics II

Track Classification: Strings & Mathematical Physics