

3d $N=2$ dualities for SQCD with D-type superpotential

Tuesday, 14 June 2022 14:30 (35 minutes)

In this talk I will discuss IR dualities for 3d supersymmetric QCD with four supercharges and extra fields in tensorial representation of the gauge group, giving rise to superpotential of D-type, where D refers to the A-D-E classification. The prototypical example of such dualities was conjectured in the mid 90's for $SU(N)$ SQCD with four supercharges and with two adjoints. Various generalizations, involving real gauge groups and other two-index tensor representations, have been studied as well. In this talk I will show how these results extend to 3d, generalizing previous constructions discussed in the recent literature and unifying the webs of dualities found here with the ones already obtained for ordinary SQCD and for SQCD with one adjoint and an A-type superpotential. As a consistency check I will discuss a parallel analysis in terms of the three sphere partition function. I will conclude by discussing open problems and possible future directions.

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