

Surface operators in $N = 2$ SQCD and Seiberg duality

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Abstract

Surface operators in gauge theories are non-local operators supported on co-dimension two submanifolds of spacetime. In this talk, I will discuss about half-BPS surface operators in $N=2$ SQCD in four dimensions with $SU(N)$ gauge group and $2N$ fundamental flavours following two different approaches. In the first approach, we treat surface operators as monodromy defects and compute the instanton partition function in the presence of such a defect using localization methods. In the second approach we study surface operators as flavour defects: these are coupled 2d/4d quivers with four dimensional $SU(N)$ gauge group as flavour symmetry. The contours specified by a particular Jeffrey-Kirwan residue prescription in the localization analysis map to particular realizations of the surface operator as flavour defects. Seiberg duality of the 2d/4d quivers is mapped to contour deformations of the localization integral which in this case involves a residue at infinity. This is reflected as a modified Seiberg duality rule.

References

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