

Topological defect junctions in 4-dimensional pure Z_2 gauge theory

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Recently, there are many studies about expanding concepts of symmetries and its applications. One of the directions is to treat non-invertible objects as “symmetry”. We explicitly constructed a non-invertible defect of duality and a 1-form center symmetry defect in 4D lattice pure Z_2 gauge theory. In this talk, we will describe the junction that occurs where the two defects overlap. The duality operator is non-invertible, so it is not necessary to be invariant under deformations that change the topology. We can make the topological relational closed for such deformations including 1-form center symmetry defects and junctions. This work is in collaboration with M.koide and S.Yamaguchi.

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