

Title A study of time reversal symmetry of abelian anyons

Name Yasunori Lee

Affiliation Kavli IPMU, University of Tokyo

Abstract We present a study of time reversal symmetry of abelian anyons \mathcal{A} in 2+1 dimensions, in the spin structure independent cases. We will find the importance of the group \mathcal{C} of *time-reversal-symmetric anyons* modulo *anyons composed from an anyon and its time reversal*. Possible choices of local Kramers degeneracy are given by quadratic refinements of the braiding phases of \mathcal{C} , and the anomaly is then given by the Arf invariant of the chosen quadratic refinement. We also give a concrete study of the cases when $|\mathcal{A}|$ is odd or $\mathcal{A} = (\mathbb{Z}_2)^N$.