

1136-18-181

Yuan-Ming Lu* (lu.1435@osu.edu), 191 W Woodruff Ave, Columbus, OH 43210. *Protected edge states in symmetry enriched topological orders: criteria and realizations*. Preliminary report.

The interplay of symmetry and two-dimensional (2d) topological orders lead to the "symmetry-enriched topological orders" (SETOs), mathematically described by a G -crossed braided tensor category where G is the symmetry group. This work is motivated by the following question: when will a 2d SETO support a gapless energy spectrum on an open boundary, which provides a sharp signature in experimental measurements?

Focusing on 2d Abelian SETOs, we propose two sufficient conditions for the existence of robust gapless edge states. We further demonstrate both criteria in a simple model. (Received January 13, 2018)