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Iris Cong* (cong@g.harvard.edu), **Meng Cheng** and **Zhenghan Wang**. *Defects between gapped boundaries in two-dimensional topological phases of matter.*

Defects between gapped boundaries provide a possible physical realization of projective non-abelian braid statistics. We develop general theories to analyze the topological properties and projective braiding of boundary defects in two-dimensional topological phases of matter. In particular, we model the algebraic structure of boundary defects through multi-fusion categories. We then establish a bulk-edge correspondence between certain boundary defects and bulk symmetry defects, which elucidates the projective braid statistics of boundary defects. We discuss the example of Majorana/parafermion zero modes, which has important applications to topological quantum computation. (Received September 25, 2017)