

Abstract Submitted
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Many-body interaction and non-Abelian anyonic statistics in a chiral spin liquid¹ HAITAN XU, JACOB TAYLOR, Joint Quantum Institute, National Institute of Standards and Technology and the University of Maryland, College Park, MD — We propose an approach to generate many-body interactions in two dimensions from two-spin interactions. Applying this approach to the celebrated Kitaev honeycomb model, we provide a framework for experimentally realizing and manipulating non-Abelian anyons, with explicit demonstration of topological properties of the generalized Kitaev model and its robustness to sources of local error. Potential implementations of our approach with cold atoms are considered.

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