Abstract Submitted
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Theory of quantum kagome ice[1] YI-PING HUANG, MICHAEL HERMELE, Department of Physics, University of Colorado Boulder — Some pyrochlore oxides realize novel dipolar-octupolar (DO) doublets on the sites of the pyrochlore lattice of corner-sharing tetrahedra. With magnetic field along the (111) direction, such systems can approximately be described as decoupled layers of a $S = \frac{1}{2}$ XYZ model on Kagome planes, with perpendicular magnetic field. A recent quantum Monte Carlo study found a zero temperature disordered phase in this model, dubbed quantum kagome ice, and proposed that it is a type of Z_2 quantum spin liquid (J. Carrasquilla, Z. Hao and R. G. Melko, *Nat. Comm.*, **6**, 7421). We will describe an effective theory for this putative Z_2 spin liquid, and present results on its symmetry fractionalization and resulting properties that may be tested in future numerical simulations.

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