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A unification of Z2 spin liquids on Kagome lattice GIL YOUNG CHO, University of Illinois, urbana-champaign, YUAN-MING LU, ASHVIN VISHWANATH, University of California, Berkeley — While there is mounting numerical evidence for the existence of a gapped Z2 spin liquid in the Kagome Heisenberg model, a complete characterization of this topological phase remains to be accomplished. A defining property, the projective symmetry group (PSG) which fixes how the emergent excitations of the spin liquid phase transform under symmetry, remains to be determined. Two popular mean field approaches, based on a fermionic or bosonic representation of spinons, provide seemingly disparate classifications. Here we discuss a duality relation that pairs a fermionic spinon ansatz to a bosonic one, which unifies these classifications, and provides concrete predictions for identifying the spin liquid state on the Kagome lattice.

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