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Realization of symmetry classes for gapped Z_2 spin liquids in simple models HAO SONG, MICHAEL HERMELE, Department of Physics, University of Colorado at Boulder — Recently it has been proposed that gapped Z_2 spin liquids in two dimensions can be partially classified by the distinct types of fractional quantum numbers carried by the Z_2 charge and flux excitations. On the square lattice with space group and time reversal symmetry, there are about 2^{19} symmetry classes. It is an open question which of these classes can be realized in simple models and, more fundamentally, whether all of these classes can actually be realized. We will present results on a class of exactly solvable models addressing these issues.

Hao Song
Department of Physics, University of Colorado at Boulder

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