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Matthew Cha, Pieter Naaijken, Bruno Nachtergaele* (bxn@math.ucdavis.edu) and
Nicholas Sherman. *A dynamical Toric Code model and stability of the superselection sectors of two-dimensional quantum lattice models.*

Kitaev's quantum double models provide a rich class of examples of two-dimensional lattice systems with topological order in the ground states and a spectrum described by anyonic elementary excitations. The infinite volume ground states of the abelian quantum double models come in a number of equivalence classes called superselection sectors. We prove that the superselection structure of these and similar models remains unchanged under uniformly small perturbations of the Hamiltonians. We introduce a Dynamical Toric Code Model and discuss some of its features. (Received September 07, 2019)