Xie Chen

Topological lattice models from gauging

In this talk, I plan to discuss explicit lattice models with topological / fracton order and how to obtain them through the process of gauging. In particular, I will cover the following examples:

1. gauging a (trivial) symmetric state with global Z2 symmetry into Toric Code;

2. gauging a Z2 symmetry breaking state into a topologically trivial state;

3. gauging a nontrivial Z2 symmetry protected topological state into the double semion topological state;

4. gauging a (trivial) symmetric state with subsystem Z2 symmetry into the X-cube model with fracton order.