

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Bound states of three fermions forming symmetry-protected topological phases CHONG WANG, Massachusetts Inst of Tech-MIT — We propose a simple theoretical construction of certain short-range entangled phases of interacting fermions, by putting the bound states of three fermions (which we refer to as clustons) into topological bands. We give examples in two and three dimensions, and show that they are distinct from any free fermion state. We further argue that these states can be viewed as combinations of certain free fermion topological states and bosonic symmetry-protected topological (SPT) states. This provides a conceptually simple understanding of various SPT phases.

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Date submitted: 09 Nov 2014

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