

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Study of vison-spinon bound states on the kagome lattice JUN-PING SHAO, Binghamton University, SHIVAM GHOSH, Cornell University, GIL-YOUNG CHO, University of Illinois at Urbana-Champaign, MICHAEL LAWLER, Binghamton University — We search for low-energy vison-spinon bound states on the kagome lattice. We do this by applying an optimization algorithm to a bosonic spin liquid state with a well separated pair of visons inserted. The resulting wavefunction reveals that the low energy eigen-modes correspond to bound spinon states localized around the visons. We study these modes and their symmetry properties. Our results provide evidence supporting the low energy effective theories of Z_2 spin liquids whose bosonic spinons, fermionic spinons and visons are characterized by projective symmetry groups consistent with the expected fusion rules and duality relations.

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Date submitted: 15 Nov 2013

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