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Tetrahedral Spin Crystal to a Chiral Spin Liquid: Frustration-induced quantum melting ARUN PARAMEKANTI, CIARAN HICKEY, University of Toronto, LUKASZ CINCIO, Perimeter Institute, ZLATKO PAPIĆ, University of Leeds — Motivated by the recent interest in interacting topological phases, we study the Haldane-Hubbard model which is shown to host a Mott insulating state with chiral tetrahedral magnetic texture. Frustration-induced melting of this spin crystal leads to a chiral spin liquid. We discuss the properties of these phases, and the Chern-Simons-Higgs theory of the intervening exotic quantum critical point.

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