Supersolid with Emergent SU(2) Symmetry SIMON LIEU, Imperial
College London, ANDREW HO, Royal Holloway, University of London, DEREK
LEE, Imperial College London, PIERS COLEMAN, Rutgers University — We
present a model of a supersolid on a 2D triangular lattice with non-Abelian ground-
state symmetry generators and examine the low-energy behavior using Bogoliubov
theory. A mean-field phase diagram is found in terms of interaction parameters of
the model and a region with an emergent SU(2) symmetry is identified at a phase
boundary between a time-reversal (TR) symmetric and TR-broken supersolid. The
enlarged degeneracy manifests itself via the acquisition of a quadratic Goldstone
mode and the topological instability of global phase vortices. This latter point im-
plies that such a supersolid is not expected to undergo a BKT superfluid transition.
The zero-temperature superfluid fraction is calculated using linear response.

Simon Lieu
Imperial College London

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