

Abstract Submitted  
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**Kondo-Heisenberg Lattice: Majorana fermions Mean field approach** SAYED ALI AKBAR GHORASHI, Texas Center for Superconductivity and Department of Physics, University of Houston, Houston, TX — we study Kondo lattice model including direct antiferromagnetic Heisenberg exchange interaction using Majorana fermions representation at half filling. An  $O(3)$ -symmetric Mean field Hamiltonian is derived on bipartite lattice. All different kind of possible spin-spin correlations functions between conduction band spins, c-electrons, and localized spin, f-electron, in both on site and different sublattices are calculated in translationally invariant solution of the mean field Theory. Finite temperature behavior of Majoranas pairs correlations are investigated for some special limit of some of the mean field parameters.

Sayed Ali Akbar Ghorashi  
Texas Center for Superconductivity and Department of Physics,  
University of Houston, Houston, TX

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