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**Majorana fermion mean field study of two-dimensional inequivalent bipartite kondo lattice** SAYED ALI AKBAR GHORASHI, Department of physics and Texas center for superconductivity, University of Houston, RUI WANG, Texas center for superconductivity, university of Houston, CHIN-SEN TING, Department of physics and Texas center for superconductivity, University of Houston — We study the antiferromagnetic kondo lattice in a bipartite square lattice using Majorana fermion representation mean field theory. In different sublattice, we introduce different kondo coupling interaction between the local moment and the conduction electrons, and discuss the possible phases of ground state. It is shown that for weak coupling regime there is more competition between two sublattices local moment interactions. Next, we turn on an equal ferromagnetic Heisenberg interaction for both sublattices and we show possible competition and cooperation between these three interactions. Finally, to gain more physical insights we investigate static magnetic susceptibility for different ratios of couplings.

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