

The copper metaborate CuB_2O_4 displays a continuous phase transition from chiral helimagnet structure (CHM) into chiral magnetic soliton lattice (CSL) by the application of magnetic field, and the spin ordering can be described as an XY model. All these phenomena arise from the competition between DM interaction and the isotropic FM coupling. The tunable, as well as the topological nature of the CSL, bring about significant magnetic properties that could be used for the modern spintronic devices and the playground for the study of quantum magnetism. For instance, the hexagonal chiral magnet $\text{Cr}_{1/3}\text{NbS}_2$ has a noticeable negative magnetoresistance. The spin dynamics of CuB_2O_4 has attracted lots of interests and been studied using different probes, but questions remain. Recently, we have reconstructed a phase diagram of CuB_2O_4 by studying the magnetization behavior. Further, by using neutron scattering with the application of a magnetic field, we demonstrate that CuB_2O_4 shows a first-order quantum phase transition.