

Abstract Submitted
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High magnetic field studies of a spin-half dimer KIM MODICK, ROSS MCDONALD, JOHN SINGLETON, Los Alamos National Lab, PAUL GODDARD, University of Oxford, JAMIE MANSON, Eastern Washington University, NATIONAL HIGH MAGNETIC FIELD LABORATORY COLLABORATION, UNIVERSITY OF OXFORD COLLABORATION, EASTERN WASHINGTON UNIVERSITY COLLABORATION — We present high magnetic field studies of an organic molecular magnet system comprising of spin half copper dimers. DC and pulsed field magnetometry combined with EPR indicate a small (~ 2 K) singlet triplet gap, and can be used to infer the sign of the triplon dispersion. Furthermore the low magnetic-exchange energy scales combined with the relatively soft organic framework of exchange pathways, indicate that the magnetic order can be readily tuned by temperature, magnetic field and pressure. The anisotropy between the effective mass of the top and bottom of the triplon band are analyzed in terms of the relative upper and lower critical fields for the onset of triplon condensation and magnetic saturation respectively.

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