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Magnetic properties of triangular lattice Ca_4IrO_6 and $Ca_{2.5}Sr_{1.5}IrO_6$[1] K.H. BUTROUNA, L. LI, T.F. QI, O.B. KORNETA, J. TERZIC, E. AKBARI, S. PARKIN, Center for Advanced Materials, University of Kentucky, S.J. YUAN, Department of Physics, Shanghai University, G. CAO, Center for Advanced Materials, University of Kentucky — We report a structural, thermodynamic, and transport study of single-crystal Ca_4IrO_6 and $Ca_{2.5}Sr_{1.5}IrO_6$. The isostructural Ca_4IrO_6 and $Ca_{2.5}Sr_{1.5}IrO_6$ feature a triangular lattice of spin chains running along the c axis. The underlying properties of the two systems are characterized by a partial antiferromagnetic order occuring at 12 K and 9 K for Ca_4IrO_6 and $Ca_{2.5}Sr_{1.5}IrO_6$, respectively, a small entropy removal associated with the phase transition, and a sizable low-temperature specific heat linearly proportional to temperature. The detailed results will be discussed along with comparisons drawn with other related systems such as $Ca_5Ir_3O_{12}$.

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T. F. Qi
Center for Advanced Materials, University of Kentucky

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