

Abstract Submitted  
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**Magnetic Order in CeGe<sub>1.76</sub> studied by neutron diffraction on single crystals**<sup>1</sup> W. JAYASEKARA, Ames Laboratory and Dep. of Physics and Astronomy, Iowa State University, Ames Ames Laboratory and Dep. of Physics and Astronomy, Iowa State University, W. TIAN, HFIR, Oak Ridge National Laboratory, A. KREYSSIG, S.L. BUD'KO, P.C. CANFIELD, R.J. MCQUEENEY, A.I. GOLDMAN, Ames Laboratory and Dep. of Physics and Astronomy, Iowa State University, Ames Ames Laboratory and Dep. of Physics and Astronomy, Iowa State University — The CeGe<sub>1.76</sub> compound shows a very interesting magnetic behavior with a rich set of features in magnetization measurements indicative for several antiferromagnetic and ferromagnetic transitions at low temperatures. In this report we will present our recent neutron diffraction studies on a CeGe<sub>1.76</sub> single crystal performed at the instrument HB-1A, High-Flux Isotope Reactor, Oak Ridge. We revealed a complex magnetic phase diagram: Below approx. 7 K, the magnetic Ce moments order in an antiferromagnetic structure with an incommensurate propagation along the c direction. The major component of the ordered moment is aligned along the b direction. Detailed temperature-dependent scans along the c direction show a lock-in to a commensurate antiferromagnetic order around 5.5 K connected with a squaring up of the ordered moments indicated by the occurrence of higher harmonic satellite Bragg peaks. Below 4 K additional Bragg peaks occur indicative of a second coexisting type of magnetic order with small moments aligned along the a or c direction. Further experiments are necessary to conclude the determination of this complex magnetic ordering in the CeGe<sub>1.76</sub> compound.

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