

Abstract Submitted
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Complex Magnetic behavior in CeGe_{1.76} Single Crystals observed by Neutron Diffraction at Low Temperatures¹ WAGEESHA JAYASEKARA, Ames Laboratory and Dept. of Physics and Astronomy, Iowa State University, WEI TIAN, HFIR, Oak Ridge National Laboratory, ANDREAS KREYSSIG, HALYNA HODOVANETS, SERGEY L. BUD'KO, PAUL C. CANFIELD, ROBERT J. MCQUEENEY, ALAN I. GOLDMAN, Ames Laboratory and Dept. of Physics and Astronomy, Iowa State University — Magnetization measurements on CeGe_{1.76} single crystals indicate two apparent magnetic transitions around 4 K and 7 K. A neutron diffraction experiment was performed at the instrument HB-1A, to study the magnetic order in detail and results will be discussed in this report. Surprisingly, several transitions have been observed: Below 7 K, incommensurate antiferromagnetic order appears with a propagation vector close to (0 0 0.25), that becomes commensurate below 5.2 K demonstrating a lock-in transition. Moreover, squaring-up behavior was also observed by the occurrence of higher harmonic Bragg peaks. An additional antiferromagnetic order was seen below 4.0 K by half-integer and integer indexed Bragg peaks. Further experiments are needed to verify the directions of the ordered magnetic moments.

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