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Near room temperature helical magnetism in $Fe(1-x)Cr(x)Ge^{1}$ YUEN YIU, NIRMAL GHIMIRE, Department of Physics and Astronomy, University of Tennessee, MICHAEL MCGUIRE, Materials Science and Technology Division, Oak Ridge National Laboratory, ASHFIA HUQ, Chemical and Engineering Materials Division, Neutron Sciences Directorate, Oak Ridge National Laboratory, DAVID MANDRUS, Materials Science and Engineering, University of Tennessee, STEPHEN NAGLER, Quantum Condensed Matter Division, Oak Ridge National Laboratory — Helical magnetic structures in chiral metallic magnets have attracted much interest recently because of the observation of complex spin textures, for example the skyrmion lattice. FeGe is a known B20 spiral ferromagnet that orders at the relatively high temperature of 280K with a helical modulation period of 700 angstroms, which propagates along either the [100] or [111] directions depending on temperature. Here we report a study on the evolution of helimagnetism as a function of Cr doping on a series of Fe(1-x)Cr(x)Ge samples with x = 0.03 to 1. Magnetic susceptibility measurements have shown that the ferromagnetic-like transition associated with helimagnetism in FeGe is suppressed around x = 0.4.

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