

Abstract Submitted
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Origin of the higher order harmonics in the long-period helimagnet $\text{Cr}_{1/3}\text{NbS}_2$ LISA DEBEER-SCHMITT, ADAM ACZEL, TRAVIS WILLIAMS, ORNL, NIRMAL GHIMIRE, Argonne National Laboratory, LING LI, University of Tennessee: Knoxville, MICHAEL MCGUIRE, ORNL, STEPHEN KUHN, MORTEN ESKILDSEN, University of Notre Dame, DAVID MANDRUS, University of Tennessee: Knoxville — Transition metal dichalcogenides have been shown to have a chiral, hexagonal space group. Previous SANS work by this group have found in $\text{Cr}_{1/3}\text{NbS}_2$ a non-centrosymmetric long-period helimagnetic structure with higher order harmonics both at zero field and in an applied field. A perfect helical state (ie sinusoidal modulation), would display no higher order peaks at zero field. Odd higher order peaks can be explained by a "squaring up" of the sin wave but not even harmonics that have been seen which implies the magnetic ground state of $\text{Cr}_{1/3}\text{NbS}_2$ is not completely understood.

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