

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Magnetism in GdFe₂Zn₂₀ VLADIMIR ANTROPOV, Condensed Matter Physics, Ames Laboratory — The magnetic structure formation and the origin of the exchange couplings in GdFe₂Zn₂₀ have been studied using the standard band-structure methods at T=0K and the ab-initio spin dynamics in the paramagnetic case. At low temperatures the relative importance of the different channels of the magnetic coupling have been analyzed. At high temperatures the soft spin deviation modes responsible for the observed high temperature of the magnetic phase transition [1] have been identified. Several strong magnetic short range order parameters have been found in this material.

[1] S. Jia, S.L. Bud'ko, G.D. Samolyuk, P.C. Canfield. cond-mat/0606615

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Date submitted: 02 Dec 2006

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