

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Electronic and Magnetic properties of NbFe₂: An itinerant magnet near a quantum critical point¹ ALASKA SUBEDI, DAVID J. SINGH, Materials Science and Technology Division, ORNL — NMR studies show that pure C14 Laves phase NbFe₂ is a weak antiferromagnet below 13K with magnetic moment per Fe of no more than $0.1\mu_B$. However, the Nb-rich samples do not show antiferromagnetism down to 1.8K, which suggests that they are close to antiferromagnetic QCP. Here we report density functional studies of the magnetic properties, band structure and Fermiology. We elucidate the nature of the ordering between the two distinct Fe sites and discuss the results in relation to the quantum criticality.

¹Work supported by DOE - DMSE.

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Date submitted: 19 Nov 2008

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