Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Coexistence of a long-range and short-range ordered state in MnV_2O_4 SEUNG-HO BAEK, KWANG-YONG CHOI, ARNEIL REYES, PHILLIP KUHNS, National High Magnetic Field Laboratory, N. DALAL, HAIDONG ZHOU, CHRIS WIEBE, NATIONAL HIGH MAGNETIC FIELD LABORATORY TEAM — We report ^{51}V zero-field NMR of manganese vanadate spinel, MnV_2O_4 together with both ac and dc magnetization measurements. The zero-field NMR spectrum consists of multiple lines distributed from 240 MHz to 320 MHz. Its temperature dependence reveals that the ground state is formed by the delicate balance between long-range ferrimagnetic order and second short-range order, which causes reentrant-spin-glass-like behavior. The unusual ground state is ascribed to the competition between Mn^{2+} and V^{3+} exchange couplings and the orbital ordering of the V site induced by the structural phase transition.

Seung-Ho Baek
National High Magnetic Field laboratory

Date submitted: 21 Nov 2006 Electronic form version 1.4