Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Temperature Dependence of Magnetic Correlations in Fe-based Parents LELAND HARRIGER, University of Tennessee at Knoxville, HUIQIAN LUO, Beijing National Laboratory for Condensed Matter Physics, MENGSHU LIU, University of Tennessee at Knoxville, CHRISTOPHER FROST, ISIS Facility, Rutherford Appleton Laboratory, PENGCHENG DAI, University of Tennessee at Knoxville — Key results from time of flight (TOF) neutron scattering measurements of $BaFe_2As_2$ and Fe_2Te_2 will be reviewed. These measurements were carried out over temperatures directly above and below T_N as well as base temperature measurements deep inside the order state and intermediate temperatures between T_N and room temperature where loosely correlated spin fluctuations persist. The large (TOF) data sets provide enough coverage of (Q, ω) space to integrate out the correlated fluctuating moment, dispersion softening, and correlation length of the excitations as a function of temperature. Taken together, these results provide a systematic accounting of how the magnetic excitations in these parents evolve as they transition from long range ordered magnets to paramagnets.

Leland Harriger
University of Tennessee at Knoxville

Date submitted: 11 Nov 2011 Electronic form version 1.4