Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Magnetic excitations in URu_2Si_2 paramagnetic and Hidden Order phases NICHOLAS BUTCH, NIST - Natl Inst of Stds Tech , MICHAEL MANLEY, Oak Ridge National Laboratory, JASON JEFFRIES, Lawrence Livermore National Laboratory, MARC JANOSCHEK, Los Alamos National Laboratory, KEVIN HUANG, M. BRIAN MAPLE, UC San Diego, AYMAN SAID, BOGDAN LEU, Argonne National Laboratory, JEFFREY LYNN, NIST - Natl Inst of Stds Tech — We have mapped the lattice and magnetic excitations in heavy fermion URu_2Si_2 via inelastic neutron and x-ray scattering measurements in the Hidden Order and paramagnetic phases. The magnetic excitations and phonons always respect the zone edges of the paramagnetic phase, showing no signs of reduced spatial symmetry. Features of the magnetic and lattice excitation spectra are associated with effects due to electronic interactions. Our results are inconsistent with simple local order parameters and density waves, and place constraints on models invoking Brillouin zone folding of the magnetic excitations. Phys. Rev. B 91, 035128 (2015)

Nicholas Butch
NIST - Natl Inst of Stds
Tech

Date submitted: 03 Nov 2015 Electronic form version 1.4