

Abstract Submitted  
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**Spin excitations in isovalently doped Ba(Fe<sub>1-x</sub>Ru<sub>x</sub>)<sub>2</sub>As<sub>2</sub><sup>1</sup>** JUN ZHAO, UC Berkeley, Y. ZHAO, NIST NCNR, K. MARTY, ORNL, C. ROTUNDU, LBNL, M. MATSUDA, ORNL, E. BOURRET-COURCHESNE, LBNL, H. YAO, J. WEN, P.N. VALDIVIA, T.R. FORREST, UC Berkeley, J.P. HU, Purdue University, DUNG-HAI LEE, R.J. BIRGENEAU, UC Berkeley — Iron based superconductors exhibit remarkably rich phase diagrams: superconductivity can be obtained through carrier doping, application of external pressure, or isovalent doping. Here we present the elastic and inelastic neutron scattering measurements on the magnetic correlations in isovalently doped Ba(Fe<sub>1-x</sub>Ru<sub>x</sub>)<sub>2</sub>As<sub>2</sub>. For the underdoped sample the static order moment are partially suppressed and the low energy spin correlation length increases upon entering the superconducting state. The spin excitation intensity is reduced with increasing Ru doping toward the over doped regime. We also studied the transfer of the magnetic spectral weight across  $T_c$  in this system.

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