

Abstract Submitted  
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**Inelastic neutron scattering studies on the incommensurate-to-commensurate transformation of low energy magnetic excitations in  $Fe_{1+\delta-y}(Ni/Cu)_yTe_{1-x}Se_x$**  ZHIJUN XU, Brookhaven National Lab, JINSHENG WEN, University of California, Berkeley, JOHN SCHNEELOCH, Brookhaven National Lab, YANG ZHAO, NIST, MASAAKI MATSUDA, Oak Ridge National Lab, WEI KU, XUERONG LIU, GENDA GU, Brookhaven National Lab, D.-H. LEE, R.J. BIRGENEAU, University of California, Berkeley, J.M. TRANQUADA, GUANGYONG XU, Brookhaven National Lab — We have performed a series of neutron scattering and magnetization measurements on  $Fe_{1+\delta-y}(Ni/Cu)_yTe_{1-x}Se_x$  system to study the interplay between magnetism and superconductivity. Both non-superconducting and superconducting samples with  $T_c$  8~15K are studied. The low energy magnetic excitations of all samples at  $T \gg T_c$  consist of two incommensurate vertical columns. They change to a distinctly different U-shaped dispersion at  $T > T_c$  for the superconducting samples and the transition temperature depend on the composition.[1] On the other hand, for all non-superconducting samples, there is no clear temperature dependence, and the low energy magnetic excitations remain two columns for temperatures down to 1.5 K. Work is supported by the Office of Basic Energy Sciences, DOE. [1]Zhijun Xu et al., arXiv:1201.4404(accepted by PRL).

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