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**Magnetism near Vortex Cores of Cuprate Superconductors** J.C. LEE, UC Santa Barbara, K. PRUDCHENKO, USC, B. LAUNSPACH, San Jose State University, E.J. RUIZ, Lam Research, C. BOEKEMA, San Jose State University — We examined muon-spin-resonance ( $\mu$ SR) vortex data of Bi2212, Tl2223, and YBCO to search for antiferromagnetism (AF) near the vortex cores. [1] Field distributions were obtained from  $\mu$ SR data using Maximum-Entropy analysis. The grain-boundary and vortex signals were fitted by Gaussian and Lorentzian curves, the latter suggestive of extra AF ordering. Narrow Gaussians fit the grainboundary signals well, independent of temperature. For  $T < 0.4T_c$ , Lorentzians fit much better than Gaussians on the high-field side associated with the vortex core. Such results suggest that magnetism exists near the vortex cores. [1,2] The field dependence of the YBCO AF Lorentzian width is discussed. An AF presence near vortex cores supports theories that predict spin ordering for cuprate superconductivity. Research supported by REU-NSF, WiSE@SJSU & SJSU College of Science. [1] J. Lee *et al*, J Appl Phys 95 (2004) 6906, and *Virtual J Appl of Superconductivity, June 2004 V6 Issue11*; K Prudchenko *et al*, [www.jyi.org/volumes/volume10/issue6/articles/prudchenko.html](http://www.jyi.org/volumes/volume10/issue6/articles/prudchenko.html) [2] C. Boekema *et al*, Int J Modern Phys B17 (2003) 3436.

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