Abstract Submitted
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Superconducting gap measurements on Co-doped SrFe2As2 single crystals by point contact spectroscopy[1] CASSANDRA R. HUNT, H.Z. ARHAM, W.K. PARK, L.H. GREENE, University of Illinois at Urbana-Champaign, J. GILLETT, S. SEBASTIAN, University of Cambridge — We present point contact spectroscopy results on single crystal Co-doped $SrFe_2As_2$. Two sets of Andreev-like enhancements in conductance are seen with nominally *c*-axis contacts. For temperatures up to $T_c = 14.5$ K, the conductance is fit to a Blonder-Tinkham-Klapwijk (BTK) model extended to two independent bands with lifetime broadening [1]. We also consider recently proposed $s_{\pm}$-wave extensions to BTK [2,3]. Many recent reports claim multiple gaps in the 122 compounds, however care must be taken to distinguish the presence of Andreev peaks from other excitation modes. We find robust evidence of an SC gap at 6 meV and evidence of another conductance enhancement at 12 mV that tracks the inner gap. The origin of this feature, and of multi-gap features as measured by PCS, are discussed. [1] G. E. Blonder, M. Tinkham, and T. M. Klapwijk, PRB **25**, 45154532 (1982). [2] A. A. Golubov, *et al.* PRL **103**, 077003 (2009). [3] I. B. Sperstad, J. Linder, A. Sudbo, PRB **80**, 144507 (2009).

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