

Abstract Submitted  
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**Symmetry measurements of the order parameter of BaFe<sub>2</sub>As<sub>2</sub> superconductors**<sup>1</sup> JUAN ATKINSON, DALE VAN HARLINGEN, Univ of Illinois - Urbana, PAUL CANFIELD, Iowa State Univ — Since the discovery of the Fe-pnictide superconductors, extensive efforts have been directed toward understanding the symmetry and mechanism of the superconducting pairing. Extended s-wave models, predominantly the s $\pm$  model, are predicted by many theories, but a definitive experimental verification has been elusive. In this case, the phase-sensitive Josephson interferometry measurements that have been effective in determining the symmetry of many superconductors do not give a definitive signature. As an alternative approach, we are searching for proximity-induced structure in the density-of-states of an s-wave superconductor proximity-coupled to Co-doped BaFe<sub>2</sub>As<sub>2</sub> superconductive crystals. Unique features are predicted to arise for s $\pm$  pairing that allow this symmetry to be distinguished from other order parameter forms such as s++ or d-wave. Observation of this structure would provide both magnitude and phase information about the multigap structure of the BaFe<sub>2</sub>As<sub>2</sub> crystal.

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