

Abstract Submitted
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Symmetry measurements of the order parameter of BaFe₂As₂ superconductors¹ JUAN ATKINSON, DALE VAN HARLINGEN, University of Illinois at Urbana-Champaign, PAUL CANFIELD, Iowa State University, DUCK CHUNG, Argonne National Laboratory — 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, predominately the s \pm model, are predicted by many theories, but a definitive experimental verification has been elusive. We are using phase-sensitive Josephson interferometry to test for magnitude and phase anisotropy in electron (Co-doped) and hole (K-doped) BaFe₂As₂ single crystals. In particular, we are looking in the heavily K-doped regime that is predicted to exhibit d-wave symmetry characterized by a sign change in the order parameter. We are also searching for proximity-induced structure in the density-of-states of an s-wave superconductor proximity-coupled to an Fe-pnictide superconductor that is predicted to arise for s \pm pairing (Koshelev, 2012).

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