

Abstract Submitted
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Possible phase-sensitive test of pairing symmetry in superconducting pnictides DAVID PARKER, IGOR MAZIN, U.S. Naval Research Laboratory — The discovery of the new class of pnictide superconductors has engendered a controversy about their pairing symmetry, with proposals ranging from an extended s-wave or “ s_{\pm} ” symmetry to nodal or nodeless d-wave symmetry to still more exotic order parameters such as p-wave. Although there is evidence that a fully gapped state may exist in the pnictides, the symmetry of this state remains indeterminate. Building on the earlier, similar work performed for the cuprates, we propose here a phase-sensitive Josephson interferometry experiment that may allow resolution of the issue, taking into consideration novel features such as the local orbital character (from DFT calculations), and employing a particular potential barrier to restrict the tunneling orientations to favorable directions.

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