

Possible pairing symmetries in SrPtAs

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We discuss possible pairing symmetries in the hexagonal pnictide superconductor SrPtAs. The local lack of inversion symmetry of the two distinct conducting layers in the unit cell results in a special spin-orbit coupling with a staggered structure. We classify the pairing symmetry by the global crystal point group D_{3d} , and suggest some candidates for the stable state using a tight-binding model with an in-plane, density-density type pairing interaction. We may have some unconventional states like s+f-wave and a mixture of chiral d-wave and chiral p-wave. The spin orbit coupling is larger than the interlayer hopping, and the mixing between spin-singlet and triplet states can be seen in spite of the fact that the system has a global inversion center.