

Abstract Submitted
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Glide plane symmetry and gap structure in the iron-based superconductors YAN WANG, Department of Physics, University of Florida, TOM BERLIJN, Oak Ridge National Laboratory, PETER HIRSCHFELD, Department of Physics, University of Florida, DOUGLAS SCALAPINO, Department of Physics, University of California, Santa Barbara, THOMAS MAIER, Oak Ridge National Laboratory — We consider the effect of glide plane symmetry of the Fe-pnictogen/chalcogen layer in Fe-based superconductors for pairing in spin fluctuation models. Recent theories have proposed that so-called η -pairing states with nonzero total momentum can be realized and possess exotic properties such as odd parity spin singlet symmetry and time-reversal symmetry breaking. Here we show that η -pairing is inevitable when there is orbital weight at the Fermi level from orbitals with even and odd mirror reflection symmetry in z ; however, by explicit calculation, we conclude that the gap function that appears in observable quantities is identical to that found in earlier, 1 Fe per unit cell pseudo-crystal momentum calculations. P.J.H. and Y.W. were supported by Grant No. DOE DE-FG02-05ER46236 and T.B. was supported as a Wigner Fellow at the Oak Ridge National Laboratory. A portion of this research was conducted at the Center for Nanophase Materials Sciences, which is sponsored at Oak Ridge National Laboratory by the Scientific User Facilities Division, Office of Basic Energy Sciences, US Department of Energy.

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