

Abstract Submitted
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Model of vortex states in hole-doped iron-pnictide superconductors YI GAO, HUAI-XIANG HUANG, CHUN CHEN, C.S. TING, WU-PEI SU — Based on a phenomenological model with competing spin-density-wave (SDW) and extended s -wave superconductivity, the vortex states in $\text{Ba}_{1-x}\text{K}_x\text{Fe}_2\text{As}_2$ are investigated by solving Bogoliubov-de Gennes equations. Our result for the optimally doped compound without induced SDW is in qualitative agreement with recent scanning tunneling microscopy experiment. We also propose that the main effect of the SDW on the vortex states is to reduce the intensity of the in-gap peak in the local density of states and transfer the spectral weight to form additional peaks outside the gap.

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