Exploring Local Density of States in FeSe-based Superconductors
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Houston, TX 77204 — Starting from two Fe ions per unit cell and two degenerate
orbitals per Fe ion, we construct an effective four-band model for the FeSe-based
superconductors, which Fermi surfaces are consistent with those from the ARPES
experiments and LDA calculations. The hole pockets at $(0,0)$ and the electron pock-
ets at (π, π) are controlled by hopping between the same orbitals on the nearest and
second neighboring sites while the intervals between the inner and outer Fermi sur-
faces around $(0,0)$ and (π, π) are determined by hopping between different orbitals
on the same sublattice. On the basis of the mean field theory for superconductivity,
we also investigate the local density of states for different pairing symmetries and
compare them with the recent STM experiments.

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