

Abstract Submitted
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Gap structure in Fe-based superconductors with accidental nodes

ALBERTO HINOJOSA ALVARADO, ANDREY CHUBUKOV, University of Minnesota Twin Cities — We study Fe-based superconductors with s -symmetry and accidental gap nodes on electron pockets. We consider ellipticity, hybridization and an additional inter-pocket pairing interaction and analyze their effect on the gap structure and on the existence and location of nodal points in the quasiparticle dispersions. Depending on these parameters the gap functions at the Fermi surface may be uniform, have nodal points, or vary their phase continuously. In the quasiparticle dispersions, there exist nodal points only if the phase difference between the hybridization and inter-pocket pairing parameters is a multiple of $\pi/2$. The two parameters tend to shift the position of the nodes in the same or in opposite directions depending on their relative phases. When the parameters reach a critical value the nodes disappear.

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