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Assessment of Possible FFLO States in Real Materials. ALAN KYKER, WARREN PICKETT, University of California, Davis, FRANCOIS GYGI, Lawrence Livermore National Laboratory — Very recently a few materials have been suggested to show realizations of the Fulde-Ferrell-Larkin-Ovchinnikov superconducting phase with nonzero Q pairs: κ -(BEDT-TTF)₂Cu(NCS)₂, CeCoIn₅, UBe₁₃, and conceivably ZrZn₂. Occurrence of this phase is highly dependent on the degree to which finite pair momentum can nest spin split Fermi surfaces. Histograms of the "projected Fermi velocity density of states" provides a useful method of measuring the degree of nesting possible for a given material, and hence its suitability for supporting an FFLO phase. We present and discuss the nesting properties for a number of materials using projected velocity methods, and critically evaluate the suggestions for FFLO phases.

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