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Small and nearly isotropic hole-like Fermi surfaces in LiFeAs detected through de Haas–van Alphen effect BIN ZENG, National High Magnetic Field Laboratory, Florida State University, DAIKI WATANABE, National High Magnetic Field Laboratory, Florida State University; Department of Physics, Kyoto University, QIU ZHANG, GANG LI, TIGLET BESARA, National High Magnetic Field Laboratory, Florida State University, THEO SIEGRIST, National High Magnetic Field Laboratory and Department of Chemical and Biomedical Engineering, Florida State University, LINGYI XING, XIANCHENG WANG, CHANGQING JIN, Institute of Physics, Chinese Academy of Sciences, PALLAB GOSWAMI, National High Magnetic Field Laboratory, Florida State University, MICHELLE JOHANNES, Center for Computational Materials Science, Naval Research Laboratory, LUIS BALICAS, National High Magnetic Field Laboratory, Florida State University — We show a detailed dHvA study unveiling small and nearly isotropic Fermi surface sheets in LiFeAs single crystals, which is not observed by previous dHvA results, as well as the cylindrical electron-like Fermi surfaces. Our results are in partial agreement with the ARPES results, and the small, nearly isotropic Fermi surface should correspond to the hole-like pocket, suggesting a prominent role for the electronic correlations in LiFeAs. The absence of gap nodes, in combination with the coexistence of quasi-two-dimensional and three-dimensional Fermi surfaces, favor an s-wave pairing symmetry for LiFeAs.

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