

Abstract Submitted
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Quantum oscillation experiments on iron pnictides LaFe_2P_2 and CeFe_2P_2 BOBBY PREVOST, SIMON BLACKBURN, ANDREA D. BIANCHI, MICHEL COTE, GABRIEL SEYFARTH, Département de physique, Université de Montréal & RQMP, Montréal, QC, Canada, MAREK BARTKOWIAK, Paul Scherrer Institut-LDM, PSI, Switzerland, OLEG IGNATCHIK, JOCHEN WOSNITZA, Dresden High Magnetic Field Laboratory, Forschungszentrum Dresden, Rossendorf, Germany, ROY G. GOODRICH, Department of Physics, George Washington University, Washington, DC, CIGDEM CAPAN, ZACHARY FISK, Department of Physics & Astronomy, University of California Irvine, Irvine, CA, USA — We investigated the quantum oscillations of the non-superconducting iron pnictides LaFe_2P_2 and CeFe_2P_2 . Those compounds are isostructural to the high-temperature superconductor $(\text{Ba}_{1-x}\text{K}_x)\text{Fe}_2\text{As}_2$ [M. Rotter et al., Phys. Rev. Lett. 101, 107006 (2008)]. Measurements have been carried out using a torque cantilever in fields up to 35 T. Angular-dependent observations of the extremal Fermi surface areas shows a good agreement with our density functional theory calculation using GGA+U functional, which has been used to constructed the Fermi surfaces. We found significant differences between the Fermi surfaces of the two compounds, with LaFe_2P_2 showing a much more three dimensional Fermi surface.

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