Abstract Submitted for the MAR11 Meeting of The American Physical Society

The Fermi surface of $CePt_2In_7$: a two-dimensional analog of $CeIn_3$ MOAZ ALTARAWNEH, MPA-CMMS. Los Alamos National Laboratory, NEIL HARRISON, ROSS MCDONALD, FEDOR BALAKIREV, CHARLES MIELKE, PAUL TOBASH, JIAN-XIN ZHU, JOE THOMPSON, FILIP RONNING, ERIC BAUER — We report magnetic quantum oscillations in magnetic fields extending to ~ 60 T in single crystals of the body-centered tetragonal antiferromagnetic $CePt_2In_7$ recently discovered to exhibit pressure- induced superconductivity at T_c = 2.1 K. Despite two-dimensionality of its Fermi surface, the microscopic electronic properties of layered $CePt_2In_7$ are revealed to be more similar to cubic CeIn₃ than layered CeRhIn₅. A significant field-induced change in the Fermi surface occurs at H_m around 45 T in both CePt₂In₇ and CeIn₃, below which it is broken into small pockets with field-dependent effective masses -signaling 4f-electron involvement in the Fermi surface for $H < H_m$. Our findings suggest that CePt₂In₇ and CeIn₃ differ solely by the dimensionality of their Ce sublattices, thus realizing an ideal pair of compounds for investigating the effect of dimensionality on boosting superconductivity.

> Moaz Altarawneh MPA-CMMS. Los Alamos National Laboratory

Date submitted: 13 Dec 2010

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