

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Quantum oscillations in magnetically doped SmB_6 GANG LI, COLIN TINSMAN, BENJAMIN LAWSON, FAN YU, TOMAYA ASABA, University of Michigan, XIANGFENG WANG, JOHNPIERRE PAGLIONE, University of Maryland, LU LI, University of Michigan — Quantum oscillation study on pure SmB_6 has revealed two-dimensional Fermi Surfaces in both crystalline (001) and (101) surface planes. On the (101) surface plane, only one area of Fermi surface is observed, consistent with theoretical prediction of surface state protected by time-reversal symmetry. It has been further predicted that for the system there is not only time reversal symmetry reservation but also crystalline mirror symmetry reservation that could give rise to protected surface states. By introducing magnetic impurities such as 1% Fe or 1% Ni into SmB_6 , the magnetic ground state is altered and no longer has the time reversal symmetry. However, quantum oscillations are still observed for both Fe_xSmB_6 and Ni_xSmB_6 at higher field, the dispersive angular dependence of frequency will be discussed with comparison to SmB_6 .

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Date submitted: 14 Nov 2014

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