Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

High-field magnetoconductivity study of a candidate Weyl semimetal KIMBERLY MODIC, Max Planck Institute, BRAD RAMSHAW, ROSS MCDONALD, PHILIP RONNING, ARKADY SHEKHTER, Los Alamos National Laboratory, TONI HELM, MAJA BACHMANN, PHILIP MOLL, Max Planck Institute, LOS ALAMOS NATIONAL LABORATORY TEAM, MAX PLANCK INSTITUTE TEAM — The monopnictides have attracted considerable attention recently due to their conjectured linear band crossings in momentum space. Upon breaking time-reversal or inversion symmetry, the spin-degeneracy at a Dirac node can be lifted to reveal two Weyl points that are characterized by a right- and left-handedness (chirality). These 'Weyl semimetals' are expected to host exotic phenomena, including topological Fermi arc surface states and unusual magnetotransport properties. The search for such materials, however, is complicated by the additional presence of trivial (non-Weyl) sections of Fermi surface. Thus, we use high magnetic fields to isolate the the zeroth Landau levels at the Weyl nodes, and measure microstructured transport devices to avoid "current-jetting" effects common in such high mobility systems. We measure the longitudinal and transverse magnetoconductivity in the quantum limit of NbP, a candidate Weyl semimetal, to look for experimental signatures that characterize a Weyl state.

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Date submitted: 11 Nov 2016 Electronic form version 1.4