Abstract Submitted
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High-field magnetotransport studies in microstructures of Yb_2Pt_2Pb TONI HELM, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, FEDOR BALAKIREV, National High Magnetic Field Laboratory, Los Alamos National Laboratory, Los Alamos, HELGE ROSNER, MAJA BACHMANN, PHILIP MOLL, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany — Yb_2Pt_2Pb (YPP) is a strongly frustrated Shastry Sutherland (SSL) Anitiferromagnet with a a ordering temperature of $T_N = 2\,\mathrm{K}$. The antiferromagnetic (AF) order is comprised of two AF sublattices built from dimers of Yb^{3+} ions in the *ab* planes [1]. Unlike other quantum magnets, YPP is a highly conductive metal [2]. Recently, exotic quantum effects were reported from neutron scattering experiments that indicate charge-orbital separation along the *c* axis, similar to quasi-1D materials [3]. To study the influence of YPPs rich magnetic structure on the anisotropic charge transport, we fabricated micron-sized transport devices from single crystalline YPP by Focused Ion Beam etching. This technique enables high-precision magnetotransport measurements along the most relevant lattice directions in magnetic fields of up to 65 T. Our findings reveal insights on the electronic structure of YPP. [1] Miiller, W. et al. PRB 93,104419 (2016) [2] Kim, M.S. and Aronson, M.C. PRL 110, 017201 (2013) [3] Wu, L. S. et al. Science 352,6290pp1206 (2016)

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