

Abstract Submitted
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Transport Measurements Between Superconductors and Semiconducting Structures¹ STEPHANIE LAW, University of Illinois at Urbana Champaign, MICHAEL VISSERS, KEVIN INDERHEES, TIMOTHY MCARDLE, ALLISON DOVE, PAUL GOLDBART, NADYA MASON, JAMES ECKSTEIN — We report IV characteristics and differential resistance measurements on two dimensional electron gases and degenerately doped semiconductors in high magnetic fields. The samples are fabricated into Hall bars for measurement. Differential resistance and IV characteristics are then measured in a novel three terminal setup which allows us to measure voltage changes upstream of the current as well as conventional two and four terminal setups. The measurements are made at low temperatures in magnetic fields up to 7T both at fields where chiral edge states exist and at those where they do not exist. We are thus able to investigate the effect of chirality on transport. Samples are made both with high critical field superconducting contacts and with normal metal contacts, allowing us to compare the effect of injecting Cooper pairs into the structure.

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