

Abstract Submitted  
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**Magneto-transport studies in mesoscopic InAs 2DEG devices<sup>1</sup>**

ERNESTO MARINERO, THOMAS BOONE, LIESL FOLKS, BRUCE GURNEY, JORDAN KATINE, SERGIO NICOLETTI, Hitachi San Jose Research Center — We report on magneto-transport studies in lithographically patterned InAs 2DEG devices. Electron transport between adjacent current injection and extraction channels was studied as a function of temperature and magnetic field. The mean free path in the quantum well at RT and 5 K in our devices is approximately 280 nm and 980 nm respectively. The spacing between the current tabs in our devices range from 1000 nm to 300 nm and typical tab widths range from 300 nm to 100 nm. Low temperature measurements reveal contributions of ballistic transport in our devices; fluctuations in magneto-resistance are observed at distinct values of the perpendicularly applied magnetic field. Said fluctuations will be discussed in the context of ballistic electron focusing trajectories and possible contributions from the quantum Hall effect.

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