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**Quantum Transport near the Charge Neutrality Point in Inverted Type-II InAs/GaSb Field-Effect Transistors** W. PAN, J.F. KLEM, J.K. KIM, M. THALAKULAM, M.J. CICH, Sandia National Labs, S.K. LYO, University of California, Irvine — We present here our recent quantum transport results around the charge neutrality point (CNP) in a type-II InAs/GaSb field-effect transistor. At zero magnetic field, a conductance minimum close to  $4e^2/h$  develops at the CNP and it follows semi-logarithmic temperature dependence. In quantized magnetic ( $B$ ) fields and at low temperatures, well developed integer quantum Hall states are observed in the electron as well as hole regimes. Electron transport shows noisy behavior around the CNP at extremely high  $B$  fields. When the diagonal conductivity  $\sigma_{xx}$  is plotted against the Hall conductivity  $\sigma_{xy}$ , a conductivity circle law is discovered, suggesting a chaotic quantum transport behavior. Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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