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Insulating Behavior of Strongly Interacting 2D Electrons in Si MOSFETs[1] SHIQI LI, M. P. SARACHIK, City College of New York, CUNY, S. V. KRAVCHENKO, Northeastern University, Boston — Experiments on low disorder strongly-interacting 2D electron systems have shown that in the absence of a magnetic field, the temperature dependence of the resistivity changes from metallic-like to insulating behavior as the electron density n_s is reduced below a critical density n_c [1]. It has been shown that a metal to insulator transition also occurs in these systems for fixed electron density n_s at a critical (density-dependent) in-plane magnetic field which results in complete spin polarization of the electrons [2]. Here we report measurements of the temperature dependence of the resistivity in a high mobility Si-MOSFET sample, where in one case the insulating state is reached by reducing the electron density in zero field, and in the other case it is reached by "quenching" the metallic behavior with an in-plane field of 5 T. We find that the resistivity of the insulating state behaves in very similar ways for both cases, exhibiting Efros-Shklovskii variable range hopping regardless of the degree of polarization of the electron spins. [1] S. V. Kravchenko et al., Phys. Rev. B 51, 7038 (1995) [2] D. Simonian et al., Phys. Rev. Lett. 79, 2304 (1997)

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