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Insulating States in the Integer Quantum Hall Regime[1] TALBOT KNIGHTON, Wayne State University, ALESSANDRO SERAFIN, National High Magnetic Field Laboratory, ZHE WU, VINICIO TARQUINI, Wayne State University, J. F. XIA, NEIL SULLIVAN, National High Magnetic Field Laboratory, LOREN PFEIFFER, KEN WEST, Princeton University, JIAN HUANG, Wayne State University — Quantum Hall measurements are performed at temperatures 20-300 mK in high quality p-type GaAs quantum well systems having mobility $\mu = 4 \times 10^6$ cm^2/V·s for density 5×10^{10} cm^{-2}. We report a series of insulating phases appearing at or near integer filling factors $\nu \geq 1$. The DC resistance demonstrates a maximum of 25MΩ, much larger than the quantum resistance h/e^2, with threshold transport behavior at low currents around 10 pA at low temperatures. The threshold diminishes upon heating up to 200 mK, consistent with a finite temperature melting of bubble phases or Wigner crystal. Additionally, these peaks have a complex electrical impedance for AC signals, with large phase shifts down to 1Hz. In this regime, the ac impedance of the two chiral edges show distinct correlated characteristics.

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