Weiss oscillations and particle-hole symmetry at the half-filled Landau level ALFRED CHEUNG, S. RAGHU, Stanford University, MICHAEL MULLIGAN, University of California, Riverside — Unbroken particle-hole symmetry with respect to a filled Landau level n of the two-dimensional electron gas requires the electrical Hall conductivity to equal $\frac{2n-1}{2}\frac{e^2}{h}$ at half-filling. In this note, we study the consequences of weakly broken particle-hole symmetry for magnetoresistance oscillations about half-filling when there is a one-dimensional (approximately) electrostatic potential present. We find an approximate sum rule obeyed for all pairs of oscillation minima that can be tested in experiment. We discuss the implications of our results and approximations for the description of the half-filled Landau level.

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