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Edge mode velocities in the quantum Hall effect from a dc measurement[1] PHILIP ZUCKER, D. E. FELDMAN, Brown University — Because of the bulk gap, low energy physics in the quantum Hall effect is confined to the edges of the 2D electron liquid. The velocities of edge modes are key parameters of edge physics. They were determined in several quantum Hall systems from time-resolved measurements and high-frequency ac transport. We propose a way to extract edge velocities from dc transport in a point contact geometry defined by narrow gates. The width of the gates assumes two different sizes at small and large distances from the point contact. The Coulomb interaction across the gates depends on the gate width and affects the conductance of the contact. The conductance exhibits two different temperature dependencies at high and low temperatures. The transition between the two regimes is determined by the edge velocity. An interesting feature of the low-temperature $I - V$ curve is current oscillations as a function of the voltage. The oscillations emerge due to charge reflection from the interface of the regions defined by the narrow and wide sections of the gates. This work is available at arXiv:1510.01725

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