

Abstract Submitted  
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**Dynamic Nuclear Polarization in a Quantum Point Contact in the Integer and Fractional Quantum Hall Regimes**<sup>1</sup> ANGELA KOU, DOUGLAS MCCLURE, CHARLES MARCUS, Harvard University, LOREN PFEIFFER, KEN WEST, Princeton University — We present measurements of resistively detected dynamic nuclear polarization in a quantum point contact (QPC) in the integer and fractional quantum Hall regimes. After applying a finite dc bias to the QPC, we observe shifts in the locations of integer and fractional plateaus in the diagonal resistance measured across the QPC. These shifts persist on time scales of tens of minutes and disappear upon application of rf pulses at the nuclear magnetic resonance frequencies. This behavior is explained in terms of a shift in Zeeman energy caused by the nuclear hyperfine field. In the fractional quantum Hall regime, symmetric shifts about  $\nu = 1/2$  suggest a composite fermion-based explanation.

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Angela Kou  
Harvard University

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