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# Spin Phase Transition at the Edge of a QH System

Yuval Gefen<sup>\*1</sup>, Udit Khanna<sup>2</sup>, Ganpathy Murthy<sup>3</sup>, and Sumathi Rao<sup>2</sup>

<sup>1</sup>Weizmann Institute of Science (WIS) – 234 Herzl Street, Rehovot 76100 Israel, Israel

<sup>2</sup>HRI – Allahabad, India

<sup>3</sup>University of Kentucky – Lexington, Kentucky, United States

## Abstract

Quantum Hall states can be characterized by their chiral edge modes. Upon softening the edge potential, the edge has long been known to undergo spontaneous reconstruction driven by charging effects. I will discuss [1] a new type of quantum phase transitions at the edge, which are qualitatively distinct from charge-driven transitions. The spin-switching phase transition is driven by exchange effects, and is manifest by an abrupt change in the ordering of the chiral modes at the edge. I will specifically discuss the  $\nu = 3$  scenario. The transition occurs as the edge potential is made softer, while the ordering in the bulk remains intact. This phenomenon is robust, and has many variable experimental signatures in transport. 1. U. Khanna, G. Murthy, S. Rao, Y. Gefen, submitted.

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<sup>\*</sup>Speaker