Theory of the quantum Hall nematic transition\textsuperscript{1}
JOSEPH MACIEJKO, University of Alberta

The discovery of novel types of macroscopic order in quantum many-particle systems is an important goal of condensed matter physics. The fractional quantum Hall (FQH) nematic is a conjectured state of matter in which a fractional quantized Hall conductivity indicative of topological order coexists with the spontaneous breaking of rotational symmetry characteristic of a nematic liquid crystal. Recent experiments suggest that this state may form in 2D electron gases in the first Landau level. In this talk I will present a theory of the quantum phase transition between an isotropic FQH liquid and a FQH nematic state.

\textsuperscript{1}Support from the Simons Foundation and NSERC of Canada are gratefully acknowledged.