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Title: Real Space Entanglement Spectrum of Fractionally Quantized Hall States

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The Fractional quantum Hall effect was one of the first experimental systems to exhibit what is now called topological phases of matter. These are incompressible (gapped) quantum fluids that show charge fractionalization, quantization of Hall conductance, and are immune to local perturbations, such as disorder. Topological phases, generally, defy the Laundau paradigm of order parameter and broken symmetry. Instead they are classified by their topological order, for example by their signature edge physics. In this talk the role of computational studies in understanding the fractional quantum Hall effect, in general, and recent computational attempts to measure the topological order from the ground state, in particular, will be discussed. In addition to the ground state degeneracy on the torus, these now include calculations of the Hall viscosity and quantum entanglement. New results on the real space entanglement spectrum, and their relation to the actual edge mode energies, will be presented.