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**Title:** Towards a unified description of the quantum Hall effects


**Abstract:**
The fractional quantum Hall effect (FQHE) refers to the collection of emergent phenomena and quantum phases of matter observed in two-dimensional electrons placed in a strong perpendicular magnetic field. FQHE forms a paradigm in our understanding of strongly correlated systems. FQHE in the lowest Landau level (LLL) is understood in a unified manner in terms of composite fermions, which are bound states of electrons and vortices. In this tutorial, I will describe how the most prominent states in the LLL are understood as integer quantum Hall states of composite fermions and the compressible state at 1/2 as a Fermi liquid of composite fermions. Until recently, for the FQHE in the second LL, such a unified description was lacking: experimentally observed states were described by different physical mechanisms. I will demonstrate how a unified understanding of all of the quantum Hall effects can be obtained using the ``parton" theory which generalizes the idea of composite fermion.