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Title: The Quantum Hall effect and edge modes in the Many-Body context

Abstract: The exact quantization of the Hall conductance, discovered experimentally by von Klitzing in 1980, is by now well understood in the single particle context. A complete description of the effect however, must take into account interactions and therefore requires a many-body description. A proof of quantization of the Hall conductance of an interacting electron system was first achieved by Hastings and Michalakis. I will present a simplified account of this proof, and indicate how similar techniques can be used to prove the existence of gapless edge modes in the many-body context.