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Wigner path integral solution for the integer quantum Hall effect DRIES SELS, FONS BROSENS, WIM MAGNUS, BART SOREE, Universiteit Antwerpen — The real time propagator of the Wigner distribution function can be constructed from the Wigner-Liouville equation as a phase space path integral. By analogy with the Feynman path integral one can define a new effective Lagrangian of the system in the Wigner-Weyl representation. The effects of gauge transformations and geometric constraints on the action are discussed. In particular we discuss the dynamics of a non-interacting 2DEG on a Hall strip.

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