

Abstract Submitted
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Electron transport in the presence of a magnetic field and the absence of translational invariance TOBIAS KRAMER, ROBERT E. PARROTT, ERIC J. HELLER, Physics Department Harvard University — Recent experimental techniques in 2DEGs using scanning probe microscope tips allow one to spatially image electron flow directly (see also the talk by Kathy Aidala). These developments motivate theoretical consideration of (localized) magnetic edge states in position space. For the case of a parabolic confinement, a semi-analytic expression of the Green function is given. The underlying physics differs from a conventional edge-state model by the absence of translational invariance. It is also possible to derive a semiclassical interpretation of the current density, which provides additional physical insight into the nature of transport in position space. For additional information, see also <http://people.deas.harvard.edu/~tkramer>

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