

Abstract Submitted
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Generic Hall viscosity and response functions in the IQHE¹ YU SHEN, F. D. M. HALDANE, Princeton Univ — We reformulate the Hall viscosity for the IQHE in the most generic case without rotational or Galilean symmetry. By defining the stress-energy tensor as the response to strain of the matter fields rather than to variation of the metric (which doesn't exist at the absence of rotational symmetry), we differentiate between covariant and contravariant indices to clarify the structure of the tensor. Generic density/current response functions are also calculated. The simple identification of the q^2 term of the Hall conductance as the Hall viscosity breaks down and we show that the q^2 term consists of a universal part that is proportional to the Hall viscosity tensor and other non-universal Landau-level-mixing terms that depend on the details of the Hamiltonian. In the Galilean limit, the formula reduces to the previously found form.

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