

Abstract Submitted
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Magnetic Response Functions in Landau Levels YANG GAO, QIAN NIU, UT Austin — We propose a new quantization scheme which generates Landau levels consistent with the zero-field magnetic response functions from the semiclassical theory. It reproduces the Onsager's rule in the leading order, and re-formulates corrections to the Onsager's rule from the Berry phase and magnetic moment effect in terms of one single magnetic response: the zero-field magnetization. It can yield higher order corrections by including successively magnetic susceptibility and higher order magnetic response functions. In application, it can be easily applied to obtain Landau levels in lattice models. Moreover, it provides an experimental method of measuring different magnetic response functions directly from the measurement of Landau level fan diagram or Hofstadter spectrum.

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