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Signature of the electron-electron interaction in the magnetic field dependence of the nonlinear I-V characteristics in non-centrosymmetric conductors ERIC DEYO, BORIS SPIVAK, University of Washington, A. YU. ZYUZIN, A. F. Ioffe Institute — In non-centrosymmetric media, there exists a contribution to the nonlinear I-V characteristics which is linear in magnetic field and quadratic in voltage. This effect is entirely due to electron-electron interaction, and its magnitude is proportional to the electron-electron interaction constant. We present calculations of the magnitude of this effect in mesoscopic samples and in chiral carbon nanotubes as a function of temperature. In the case of a magnetic field oriented parallel to plane of a mesoscopic sample, the effect is proportional to both the electron-electron interaction constant and the spin-orbit scattering amplitude.

Eric Deyo
University of Washington

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