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Magneto-Oscillations of Current-Induced Spin Polarization in 2DEG MAXIM VAVILOV, Yale University — We consider a disordered two-dimensional electron gas with spin-orbit coupling placed in a perpendicular magnetic field and calculate the magnitude and direction of the current-induced spin polarization. We find that in strong magnetic fields the polarization becomes an oscillatory function of the magnetic field and that the amplitude of these oscillations is parametrically larger than the polarization at zero magnetic field. We show that the enhanced amplitude of the polarization is a consequence of strong electron-hole asymmetry in a quantizing magnetic field.

Maxim Vavilov
Yale University

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