Intrinsic spin Hall conductivity$^1$ PAVEL KROTKOV, University of Maryland, SANKAR DAS SARMA, University of Maryland — In an isotropic 2D gas with general dispersion and linear-in-k spin-orbital interaction of the Rashba or Dresselhaus type in the presence of impurities we find that an intrinsic spin-Hall conductivity is finite and is of the order of the spin-orbit term squared. It vanishes only in the well-studied particular case of a quadratic dispersion.

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