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**Effect of electron correlations on the Spin-Hall conductivity in a 2D Rashba electron system** S SATPATHY, H MESKINE, University of Missouri - Columbia — The spin-Hall effect in 2D electron systems (2DES) is currently an intense field of theoretical research. In this work we study the spin-Hall effect in a two-dimensional electron system (2DES) with Rashba spin-orbit coupling and electron-electron Coulomb interaction. The problem is examined by performing a density-functional calculation of the 2DES and computing the conductivity  $\sigma_{SH}$  using the Kubo-Greenwood formula. It is found that the Coulomb interaction renormalizes the spin-Hall conductivity and that the strength of the renormalization depends on the electron density  $r_s$ .

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