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Many-body local field corrections to spin Coulomb drag in a quasi-two-dimensional electron system[1] SAMVEL BADALYAN, Department of Radiophysics, Yerevan State University, 375025 Armenia and Department of Physics, University of Regensburg, 93040 Regensburg, Germany, CHANG SUB KIM, Department of Physics, Chonnam National University, 500-757 Gwangju, Korea, GIOVANNI VIGNALE, Department of Physics and Astronomy, University of Missouri - Columbia, Missouri 65211, USA — We investigate the effect of exchange and correlation on spin Coulomb drag in a quasi-two-dimensional electron gas of finite transverse width. We find that the finite transverse width of the electron gas causes a significant reduction of the spin Coulomb drag. This reduction, however, is largely compensated by the enhancement coming from the inclusion of many-body local field corrections beyond the random phase approximation. Our calculations are in very good agreement with and confirm the experimental observations of the spin Coulomb drag by C. P. Weber *et al.*, Nature, **437**, 1330 (2005).

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