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Rashba spin-orbit and lateral local confinement effects in quasi-two-dimensional electronic systems GABRIELE GIULIANI, STEFANO CHESI, Purdue University — We consider the effects of lateral confinement on a two dimensional electron gas in the presence of different types of spin-orbit coupling as applied to the electrons and holes in *GaAs* heterostructures. Both the linear and cubic Rashba spin-orbit coupling mechanisms have been studied. We show that confinement leads to interesting spin polarization effects that can in principle be observed by transport measurements across a quantum point contact.

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