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Magneto-conductance of hybrid quantum ring NAMMEE KIM, HEESANG KIM, DAE-HAN PARK, Soongsil University — Magneto-conductance behaviors of hybrid magnetic-electric quantum rings are studied. The hybrid magnetic-electric quantum rings are formed by spatially in-homogeneous distributions of magnetic fields and the additional antidot electrostatic potential. Electrons are both magnetically and electrostatically confined to the plane. Electronic structures of hybrid magnetic-electric quantum rings and two terminal conductance taking into account the resonant backscattering via the magnetic edge channels are shown including comparison with the case of a conventional electric quantum ring with uniform external magnetic field.

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