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Transport on quantum antidot made of 4-terminal graphene ribbons ANDREA LATGE, CARLOS RITTER, UFF-Instituto de Fisica, PEDRO ORELLANA, UCN-Departamento de Fisica, MONICA PACHECO, UTSM-Departamento de Fisica — Electronic and transport properties of four-terminal graphene ribbons are discussed taking into account different configurations of quantum antidot potentials, designed at a central conductor. In general, the formation of these antidot potentials promotes a reorganization of the carriers, leading to an electronic localization at the neighboring vacancy sites. Depending upon the position, extension, and symmetries of such antidots, one may find delocalization along the structure due to the formation of new allowed paths. Here we discuss the origin of conductance dips, maximum and complete transport suppressions, within the microscopic scenario of the electronic localization, and using real-space Green function formalism. For such analysis we construct local electronic density of states mapping for different antidot configurations. The results are discussed in comparison with equivalent two-lead devices and perfect structures.

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