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Operator extension theory model for a system of coupled Aharonov-Bohm rings: Localization effects

A model for the system of coupled Aharonov–Bohm rings is constructed by means of operator extensions theory. Two systems are considered: the system of the rings connected with a waveguide and the system of serially connected rings. The model allows one to obtain the dispersion equation in an explicit form. The spectral properties is investigated. Localization effects are observed in each case.