Spin–polarized sequential tunneling through quantum dots coupled to magnetic leads: A real-time diagrammatic approach.

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Spin-dependent transport through two coupled single-level quantum dots attached to ferromagnetic leads with collinear (parallel and antiparallel) magnetizations is considered theoretically. Transport characteristics, including current, linear and nonlinear conductances, and tunnel magnetoresistance associated with the magnetization rotation from the antiparallel to parallel configurations, are calculated using the real-time diagrammatic technique. The real-time diagrammatic technique is based on the perturbation expansion of the reduced density matrix. In this approach each class of tunneling processes can be represented by a relevant diagram. Some limiting situations, like for instance quantum dots connected in series and in parallel, in the limit of weak dot-lead coupling is discussed.

9.7 cm

13.4 cm

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