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Transport through a triple quantum-dot ring in high-spin state YUNORI NISIKAWA, Osaka City University, TAKAHIDE NUMATA, AKIRA OGURI, Osaka City University — Using the numerical renormalization group (NRG), we study transport through a triple quantum-dot ring in high-spin state, connected to two noninteracting leads symmetrically. The transport is determined by two phase shifts for quasi-particles with even and odd parities. An isolated triple quantum-dot ring has a high-spin ground state of $S = 1$ caused by a Nagaoka ferromagnetism, when it has one extra electron introduced into a half-filling. The results show that the conduction electrons screen the local moment via two separate stages with different energy scales. The half of the $S = 1$ is screened first by one of the channel degrees, and then at very low temperature the remaining half is fully screened to form a Kondo singlet. A two-terminal conductance in the series configuration is suppressed similar or equal to 0, while plateau of a four-terminal parallel conductance reaches a unitary limit value similar or equal to $4e2/h$ of two conducting modes. We also present the relation between electronic states and thermodynamic quantities calculated using NRG eigen energies.

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