

MAGNETIC PROPERTIES OF QUANTUM
RINGS IN THE PRESENCE OF SPIN-ORBIT
AND ELECTRON-ELECTRON INTERACTIONS

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S u m m a r y

The separate and combined influences of the spin-orbit and electron-electron interactions on the electron magnetization in quantum rings have been studied theoretically on the basis of the spin-density-functional theory and the Kohn-Sham equation used for the calculation of electron states in two-dimensional parabolic quantum rings containing from two to six electrons. The magnetization of electrons in a quantum ring is calculated at zero temperature. The revealed abrupt changes in the ring magnetization are associated with the crossing of electron states that occurs if the spin-orbit and/or electron-electron interactions are taken into consideration.