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The effects of pressure and temperature on the exchange energy of a parabolic quantum dot under a magnetic field

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Abstract

The combined effects of pressure and temperature on the energy levels of a parabolic GaAs quantum dot under a magnetic field had been studied. The exact diagonalization method had been used to solve the two electron quantum dot Hamiltonian and to obtain the eigenenergies. In addition, we have investigated the effects of pressure and temperature on the singlet-triplet exchange energy ($J = E_T - E_S$) of the quantum dot as a function of a magnetic field. The magnetic field-parabolic confinement ($\omega_c -$

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