

Two-Electron Energy Spectrum in a Parabolic Quantum Dot Under a Magnetic Field

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(Received: 2002-9-3; Revised:)

Abstract: Two interacting electrons in a harmonic oscillator potential under the influence of a perpendicular homogeneous magnetic field are considered. The energies of two-electron quantum dots with the electron-LO-phonon coupling as a function of magnetic field are calculated. Calculations are made by using the method of few-body physics within the effective-mass approximation. Our results show that the electron-LO-phonon coupling effect is very important in semiconductor quantum dots.

PACS: 73.20.Dx, 36.10.Dr

Key words: electron-LO-phonon coupling, quantum dot, few-body physics

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