Quantum Size Effects on Two Electrons and Two Holes in Double-Layer Quantum Dots

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Abstract: We propose a procedure to solve exactly the Schrödinger equation for a system of two electrons and two holes in a double-layer quantum dot by using the method of few-body physics. The features of the low-lying spectra have been deduced based on symmetry. The binding energies of the ground state are obtained as a function of the electron-to-hole mass ratio σ for a few values of the quantum dot size.

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