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The Spectral Properties of two Interacting Electrons in a Quantum Dot

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Abstract: The shifted $1/N$ expansion method is used to study the spectral properties of two interacting electrons confined in a QD, under influence of a uniform magnetic field of arbitrary strength. We give explanation to the transitions in the spin and angular momenta of the QD ground state as the magnetic field sweeps. The electron addition energy is also calculated. Based on different comparisons , the shifted $1/N$ expansion method gives very good result against various methods used to study the spectra of a two electron QD.



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