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Barrier Li Quantum Dots in Magnetic Fields

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Abstract: The methods for the few-body system are introduced to investigate the states of the barrier Li quantum dots (QDs) in an arbitrary strength of magnetic field. The configuration, which consists of a positive ion located on the z-axis at a distance d from the two-dimensional QD plane (the x-y plane) and three electrons in the dot plane bound by the positive ion, is called a barrier Li center. The system, which consists of three electrons in the dot plane bound by the ion, is called a barrier Li QD. The dependence of energy of the state of the barrier Li QD on an external magnetic field B and the distance d is obtained. The angular momentum L of the ground states is found to jump not only with the variation of B but also with d.

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