

A Positronium Molecule Confined in a Two-Dimensional Space Under a Magnetic Field

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Abstract: Making use of hyperspherical coordinates, we investigate the qualitative features of the ground and low-lying states of a positronium molecule confined in a two-dimensional (2D) space under a magnetic field. We find that a positronium molecule has more bound states in 2D than in 3D. With the increase of the magnetic field, the second bound state experiences a transition in angular momentum. The result shows that symmetry plays an essential role in the energy spectrum of low-lying states.

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Key words: positronium molecule, two-dimensional space

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