عنوان مقاله:

Application of variational Monte Carlo method to the confined helium atom

محل انتشار:

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خلاصه مقاله:

A new application of variational Monte Carlo method is presented to study the helium atom under thecompression effect of a spherical box with radius (r(c)). The ground-state energies of the helium atom werecalculated for different values of r(c). Our calculations were extended to include Li(+) and Be(2+) ions. The calculationswere based on the use of a compact accurate trial wave function with five variational parameters. To optimizevariational parameters, we used the steepest descent method. The obtained results are in good agreement withprevious results.

کلمات کلیدی:

Variational Monte Carlo method, Helium atom, Compression effect