### **Accepted Manuscript**

The kinetic energy partition method applied to a confined quantum harmonic oscillator in a one-dimensional box

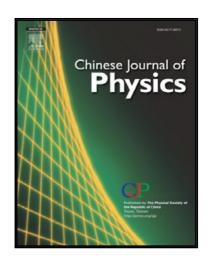
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#### ACCEPTED MANUSCRIPT

## Highlights

- We apply a new basis set expansion method to a harmonic oscillator in a box.
- We use the kinetic energy partition method to solve quantum eigenvalue problems.
- We obtain significant improvements in the convergence rate to the exact results.



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