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Bound state solutions of the Schrödinger equation with second Pöschl-Teller like potential model and the vibrational partition function, mean energy and mean free energy

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Abstract

By employing two different methods and suitable approximation schemes to deal with the centrifugal term, we solved approximately the Schrödinger equation with the Second Pöschl-Teller like potential model. The bound state energy equation and the unnormalized radial wave functions have been obtained. The vibrational partition function, mean energy and vibrational mean free energy are also obtained

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