Title:	Bound States of Spherically Symmetric Potentials: Heat Capacity Calculations
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Abstract:	We solve the time-independent Schrödinger equation for spherically symmetric potentials. First, we consider simple cases of a particle on a ring and a particle on a sphere to illustrate the degeneracy arising due to symmetry. We then consider three different spherically symmetric potentials: (i) spherical well potential, (ii) isotropic three-dimensional harmonic oscillator, and (iii) spherically confined isotropic three-dimensional harmonic oscillator. Our discussion mainly focuses on the energy levels of the bound states and the associated degeneracies. Finally, we calculate the heat capacity of endohedral fullerenes using two simple models—particle in a spherical box and confined harmonic oscillator. © 2020, Indian Academy of Sciences.
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