Inertia moment oscillating component of quantum harmonic oscillator

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Abstract

The original method for the calculation of inertia moment of nucleus at arbitrary frequencies and finite temperatures in framework of cranking model with harmonic oscillator potential is suggested. In the adiabatic case the analytical calculations show oscillations of inertia moment depending on chemical potential. Are oscillations moment of inertia is increase at spherical limit of deformation and exponentially decrease at increase of temperature.