4th International Conference on Current Problems in Nuclear Physics and Atomic Energy, NPAE 2012 - Proceedings, 2013, NPART 1, pages 108-112

Inertia moment oscillating component of quantum harmonic oscillator

Khamzin A., Sitdikov A., Nikitin A., Roganov D.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

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.