



Contribution ID: 107

Type: **Poster**

## Davydov-Chaban Hamiltonian within the formalism of deformation-dependent effective mass for Kratzer potential

Monday, 20 September 2021 15:45 (2 hours)

In this work, we modify the Davydov-Chaban Hamiltonian describing the collective motion of a  $\gamma$ -rigid atomic nucleus by allowing the mass to depend on nuclear deformation. Exact analytical expressions are derived for energy spectra as well as normalized wave functions for Kratzer potential. The model called Z(4)-DDMD (Deformation Dependent Mass with Kratzer potential), is achieved by using the Asymptotic Iteration Method (AIM). The numerical calculations for energy spectra and  $B(E2)$  transition probabilities are compared to the experimental data of  $^{192-196}\text{Pt}$  isotopes. The obtained results show an overall agreement with the experiment and an important improvement in respect to other models

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**Session Classification:** Poster Session 1

**Track Classification:** Nuclear Structure, Reactions and Dynamics