



Contribution ID: 24

Type: Poster

Low-energy spectra of nobelium isotopes

The low-energy multipole spectrum in isotopes 250-260No is investigated in the framework of fully self-consistent Quasiparticle-Random-Phase-Approximation (QRPA) method with Skyrme forces (SLy6, SkM* and SVbas) is applied. The main attention is paid to nuclei 252No and 254No, where we have most of the experimental spectroscopic information [3,4]. In addition to low-energy one-phonon collective states ($l\pi=20,22,30,31,32,43$) and K-isomers ($K^\pi = 2^-,8^-,3^+$). In general, a good agreement with the experimental data is obtained. It is shown that, in the chain 250–260No, features of 252No and 254No exhibit essential irregularities caused by a shell gap in the neutron single-particle spectra and corresponding break of the neutron pairing. The low-energy pairing-vibrational $K^\pi = 0^+$ state is predicted in 254No.

- [1] P.-G. Reinhard, B. Schuetrumpf, and J. A. Maruhn, *Comp. Phys. Commun.* 258, 107603 (2021).
- [2] A. Repko, J. Kvasil, V.O. Nesterenko and P.-G. Reinhard, arXiv:1510.01248[nucl-th].
- [3] R.-D. Herzberg and P.T. Greenlees, *Prog. Part. Nucl. Phys.* 61, 674 (2008).
- [4] R.-D. Herzberg, arXiv:2309.10468[nucl-ex].
- [5] F.L. Bello Garrote et al, *Phys. Lett. B*834, 137479 (2022).

Notes

Primary authors: MARDYBAN, Mariia (BLTP, JINR); NESTERENKO, Valentin (Joint Institute for Nuclear Research (Dubna, Russia))

Presenter: MARDYBAN, Mariia (BLTP, JINR)