

## INVESTIGATION OF LOW-ENERGY SPECTRUM IN $^{250-260}\text{No}$ CHAIN

M. Mardyban, V. Nesterenko  
*Joint Institute for Nuclear Research*  
E-mail: mmardyban@theor.jinr.ru

The low-energy multipole spectrum in isotopes  $^{250-260}\text{No}$  is investigated in the framework of fully self-consistent Quasiparticle-Random-Phase-Approximation (QRPA) method with Skyrme forces [1,2]. The representative set of Skyrme parametrizations (SLy5, SLy6, SkM\* and SVbas) is applied. The main attention is paid to nuclei  $^{252}\text{No}$  and  $^{254}\text{No}$ , where we have most of the experimental spectroscopic information [3,4]. In addition to low-energy one-phonon collective states ( $l_m=20,22,30,31,32$ ) and their rotational band, the isomeric states are inspected. In general, a good agreement with the experimental data is obtained. It is shown that, a shell gap in the neutron single-particle spectra of  $^{252}\text{No}$  and  $^{254}\text{No}$  can lead to specific properties of these two nuclei. In connection with the first experimental evidence of the scissors mode in the  $^{254}\text{No}$  [5], the distribution of M1 strength in this nucleus is analyzed.

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.* B834, 137479 (2022).