

Low-energy spectra of nobelium isotopes: scissors mode in ^{254}No

Tuesday 24 June 2025 14:00 (30 minutes)

The description of low-energy multipole spectra in isotopes $^{250-260}\text{No}$ within fully self-consistent Quasiparticle-Random-Phase-Approximation (QRPA) method [1, 2] with Skyrme forces is briefly discussed [5]. The main attention is paid to nuclei $^{250,252,254}\text{No}$, where we have most of the experimental spectroscopic information [3, 4].

The QRPA description of the recent experimental data on low-energy M1 strength in ^{254}No [6] is provided. The interplay of M1 spin-flip and orbital scissors excitations is discussed. The collectivity of the states is estimated. The interference of spin and orbital degrees of freedom 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] V. O. Nesterenko, M.A. Mardyban, R.V. Jolos, P.-G. Reinhard, A. Repko, A. A. Dzheboev, to be published *Phys. Rev. C*.

[6] F.L. Bello Garrote et al, *Phys. Lett. B* 834, 137479 (2022).

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