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

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The description of low-energy multipole specta in isotopes $^{250-260}$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}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.

References:
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. Dzhioev, to be published Phys. Rev. C.
6. F.L. Bello Garrote et all, Phys. Lett. B834, 137479 (2022).

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