

Investigation of the rotational band characteristic of the even 250-260No

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We investigated some characteristics of the behavior of the rotational bands of even nuclei 250–260No and found that for 252No and 254No arises irregularity. Such irrationality is most likely associated not with a change in deformation, but with the evolution of proton and neutron pairing in these nuclei. The study is based on calculations within the Hartree-Fock-Bogolyubov method and the Quantum-Random-Phase-Approximation method. A representative set of Skyrme forces (SVbas, SkM* and SLy6) was also used. The calculations cover the lower spectrum of continuing isotopes up to 2 MeV. An unusual neutron pairing pattern with a strong shell structure effect: the specific evolution of several sequences of particle-hole (1ph) configurations with increasing number of nucleons. Also in the description of the work, quadrupole and octupole bands are possible, which are in good agreement with experimental data.

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