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Investigation of the structure of the lowest quadrupole excitations in Ge isotopes

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At present, a lot of experimental information has been accumulated on the structure of low-lying excited states in Ge isotopes. Interest in these nuclei is due to the fact that with an increase in the number of neutrons there is a transition between spherical and deformed forms of the nucleus that determine their structure. On the other hand, microscopic calculations show that Ge isotopes are soft in relation to triaxial deformation. In this report, we analyze the properties of low-lying 2+ states in isotopes of 70-88Ge. Calculations were carried out by constructing and diagonalization of the collective quadrupole Hamiltonian. The surfaces of potential energy and mass parameters were calculated in the relativistic mean field model with two parameterization of the energy density functional: PC-PK1 and NL3. The results of the calculations are compared with the experimental data and the results obtained within other approaches.

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