

# High-spin states of $^{93}\text{Nb}$

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High spin isomers are known in  $N=83$  isotones systematically. These isomers are considered to be shape isomers caused by sudden shape changes from near spherical to oblate shapes. In order to search for high-spin isomers in other mass region, the  $^{90}\text{Zr}$  region was selected. Comparing the spherical single particle orbits near Fermi surfaces of nuclei in these two regions, there are similarities both for protons and neutrons. Then the existence of the isomers with the same origin as those in  $N=83$  isotones may be expected in nuclei of  $^{90}\text{Zr}$  region.

The high-spin states of  $^{93}\text{Nb}$  were studied via the  $^{82}\text{Se}(^{16}\text{O}, p4n)^{93}\text{Nb}$  reaction. The level scheme of  $^{93}\text{Nb}$  was extended up to 11.0 MeV in excitation energy. Twenty-three  $\gamma$ -rays and 19 levels were newly found using gg coincidence data. States lying near the yrast line were interpreted using a weak coupling picture of a  $g_{9/2}$  proton to the excited states of a  $^{92}\text{Zr}$  core. An M1 rotational band was found starting from the  $37/2(-)$  state. This band shows characteristics of a collective oblate band.

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