TWO METHODS OF THE DETERMINATION OF THE PARITIES OF LOW-LYING STATES IN $^{159}$Gd FROM ANALYSIS OF THE $\gamma$-RAY INTENSITIES FROM REACTION $^{158}$Gd($n_{\text{res}}, \gamma$)$^{159}$Gd

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Energy levels and transitions in $^{159}$Gd were studied by means of radiative capture of resonance neutrons at 12 isolated resonances of $^{158}$Gd. The time-of-flight technique was used on an enriched target at the IBR-30 reactor at JINR, Dubna. A total of 80 primary gamma transitions were recorded and their absolute intensities were determined resulting in the observation of $1/2^-$, $3/2^+$ levels up to 2.4 MeV. Parities of found levels were recalculated using two methods: the first method consists in analyzing of intensities averaging in 12 resonances and in the second method individual intensities are analyzed. The second method is described for the first time.

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