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Study of electromagnetic properties of even-even medium-mass tellurium isotopes

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The yrast spectra and electromagnetic properties of even-even medium mass tellurium isotopes are studied by employing projected shell model. From the analysis of projected shell model wave functions, the structure of yrast states is predicted. The low-lying yrast states up to spin 4+ are predicted to arise from zero-quasiparticle (qp) bands whereas the yrast 6+ states arise from 2-qp proton bands. The structure of yrast states changes further to 2-qp neutron bands as one moves along the yrast states. The B(E2) transition probabilities and g-factors are computed from projected shell model wave functions and compared with the available experimental data. The computed values are in agreement with the available experimental data. The electromagnetic quantities show a decrease in their values at spins wherever the structure of yrast states changes from 2-qp proton bands to 2-qp neutron bands. The present calculations predict spin 8+ states in lower mass tellurium isotopes to be of proton g7/2 character and spin 10+ states in higher mass tellurium isotopes to be of neutron h11/2 character.

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