Abstract Submitted
for the APR14 Meeting of
The American Physical Society

The investigation of dipole excitations in double-even ^{184}W nuclei at the spectroscopic energy region ZEMINE ZENGINERLER, The University of North Carolina at Chapel Hill, FILIZ ERTUGRAL, Sakarya University, EKBER GULIYEV, State Agency on Nuclear and Radiological Activity Regulation, Ministry of Emergency Situations, ALI EKBER KULIEV, Institute of Physics, National Academy of Sciences of Azerbaijan — The dipole excitations of double-even nucleus ^{184}W are studied using the QRPA model with rotational, translational and Galilean invariant Hamilonian. This approach not only gives opportunity to test for the validity of the present theory and it also allows for the interpretation of the experimentally spin unknown states. The analysis of calculation shows that M1 strength, mainly an orbital character predicted from calculations of orbit-to-spin ratio, has a relative contribution, rougly 63 % with summed M1 widths $\Sigma\Gamma_0^{red}(M1) = 5.3\,\mathrm{meV}$between $2<\omega_i<3.7$ MeV, to summed ground-state decay widths of dipole mode. The experimental summed widths in the same energy interval is $\Sigma\Gamma_0^{red}(\exp.) = 4.73 \pm 1.28$ meV. On the other hand, several well pronounced electric dipole K=1 excitation in spectroscopic region where mainly fulled with M1 dipole states is predicted. The total E1 widths with K=1 is $\Sigma\Gamma_0^{red}(E1) = 2.62\,\mathrm{meV}$(30% of the summed widths), quite close to the experimental value with K=0 $\Sigma\Gamma_0^{red}(\exp.) = 2.09 \pm 0.59$ meV. The theory also indicates a few positive ($\Sigma\Gamma_0^{red}(M1) = 0.24\,\mathrm{meV}$) and negative parity $\Sigma\Gamma_0^{red}(E1) = 0.34\,\mathrm{meV}$ with K = 0 states with summed widths, respectively.

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Date submitted: 13 Jan 2014 Electronic form version 1.4