

Coulomb excitation [2011AI25,2013AI10,2005Ra09](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar		NDS 129, 191 (2015)	28-Feb-2015

[2011AI25](#): E=3 MeV/nucleon ^{128}Sn beam was produced from the Holifield Radioactive Ion Beam Facility (HRIBF). Targets of a natural ^{12}C and a 90.5% enriched ^{50}Ti . Recoiling target nuclei were detected in the HyBall array of CsI crystals and γ rays were detected by 11 HPGe segmented clover detectors of the CLARION array, 2.94% total efficiency at 1 MeV. Measured E_γ , particle- γ coincidence. Deduced quadrupole moments, B(E2) values. GOSIA code used in the analysis.

[2013AI10](#): Beam= ^{128}Sn , ≈ 3 MeV/nucleon. Targets=carbon and titanium. Measurement of g-factor of first 2^+ state by recoil-in-vacuum technique following Coulomb excitation. Experiments carried out at Holifield Radioactive Ion Beam Facility (HRIBF) at ORNL. The (Particle) $\gamma(\theta)$ were measured using three rings of the bare HyBall array and three rings of the Clarion array. The attenuation of 9 angular correlations were used to determine magnitude of g_T value. Comparison with shell-model calculations.

Others: [2005Ra09](#), [2005Ra32](#), [2004Ra27](#), [2002Ra46](#) papers are coming from the HRIBF group which published a more sophisticated, new measurement and analysis in [2011AI25](#).

 ^{128}Sn Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+		
1169.0 10	$(2)^+$	1.63 ps 10	B(E2) \uparrow =0.080 5 (2011AI25); g= $(-)$ 0.23 (2013AI10) E2 matrix element= $(+)$ 0.282 9 (2011AI25). Input E2 matrix elements for other states are listed in Table I of 2011AI25 . Diagonal E2 matrix element= $-$ 0.0 24 without including high-lying states; $-$ 0.17 25 (positive interference term) and $+0.11$ 25 (negative interference term) with high-lying states included. Q= $-$ 0.02 18 without including high-lying states; $-$ 0.13 19 (positive interference term) and -0.08 19 (negative interference term) with high-lying states included. $T_{1/2}$: from B(E2) (2011AI25). g: from $g_T=0.55$ 12, average of six values obtained using carbon and titanium targets. Sign is not given by this method, it is taken from systematics of even-A Sn nuclei.
2000 †	$(4)^+$		
2078? †‡	$4^+\ddagger$		
2104 †	$(2)^+$		
2192? †‡	$0^+\ddagger$		

† Level included in the Coulomb excitation analysis of matrix element.

‡ Estimated from extrapolated systematics.

 $\gamma(^{128}\text{Sn})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π
1169	1169.0	$(2)^+$	0	0^+

Coulomb excitation 2011A125,2013A110,2005Ra09Level Scheme