Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev	NDS 124, 157 (2015)	1-Aug-2014

S(p)=−816.3 *41*; Q(α)=3934 *123* 2012Wa38

^{112}Cs Levels

Cross Reference (XREF) Flags

A ^{58}Ni(^{58}Ni,p3nγ)

E(level)†	Jπ	$T_{1/2}$	XREF	Comments
0	(1+)	0.49 ms *3*	A	%p=100; %α<0.26 Jπ: Assignment is tentative. The observed $T_{1/2}$ can only be explained with the involvement of the π3/2[411] ($d_{5/2+}$) and ν3/2[422] ($g_{7/2+}$) orbitals (2001Fe05). In accordance with the Gallagher-Moskowski rule, the $K^\pi=0^+$ state should be lower in energy compared to the $K^\pi=3^+$ one within the π3/2[411]⊗ν3/2[422] configuration. Given the observed ^{111}Xe α-decays to the $J^\pi=5/2^+$ and $7/2^+$ states in ^{107}Te, one would expect $J^\pi=5/2^+$ for the ^{111}Xe ground state, and hence, $J^\pi=1^+$ for the ^{112}Cs parent-decaying state. The assignment is consistent with the proposed configuration, given the expected Newby shift for the $K^\pi=0^+$ state, that may favor $J^\pi=1^+$ over 0^+ for the bandhead. $T_{1/2}$: weighted average of 0.47 ms *5* (2012Wa10), 0.506 ms *55* (2012Ca03) and 0.50 ms *10* (1994Pa12), deduced from HI(implant)-p(decay)(Δt) spectra. E(p)=807 keV *7* (1994Pa12) and 810 keV *5* (2012Wa10). %α: No Eα was observed in 2012Ca03. The value is an upper limit. configuration: $K^\pi=0^+$, π3/2[411] ($d_{5/2+}$) ⊗ ν3/2[422] ($g_{7/2+}$).
0+x			A	Additional information 1. Jπ: a tentative $J^\pi=(10^+)$ is proposed in 2012Wa10, but this assignment is unlikely, given the proposed configuration for the band associated with the 272.1+x keV level. It seems possible that this level coincides with the ^{112}Cs ground state. See the comments for the ground state and the 272.1+x keV level for additional details.
272.1+x‡ *12*			A	Jπ: a tentative $J^\pi=(11^+)$ and configuration=π$h_{11/2}$⊗ν$h_{11/2}$ are proposed in 2012Wa10. Since low-Ω, $h_{11/2}$ orbitals (π1/2[550] and ν1/2[550], and ν3/2[541]) are expected at relatively low excitation energies, it is unlikely that the corresponding π1/2[550]⊗ν1/2[550] and π1/2[550]⊗ν3/2[541] configurations can lead to a bandhead spin of 11^+.
707.7+x‡ *14*			A	
1351.4+x‡ *17*			A	
2143.4+x‡ *20*			A	

† From a least-squares fit to Eγ.

‡ Band(A): rotational band with a tentative configuration=π$h_{11/2}$⊗ν$h_{11/2}$ assignment.

Adopted Levels, Gammas (continued)

$\gamma(^{112}Cs)$

E_i(level)	E_γ †	I_γ †	E_f
272.1+x	272.1 *12*	100	0+x
707.7+x	435.6 *6*	100	272.1+x
1351.4+x	643.7 *10*	100	707.7+x
2143.4+x	792 *1*	100	1351.4+x

† From 2012Wa10.

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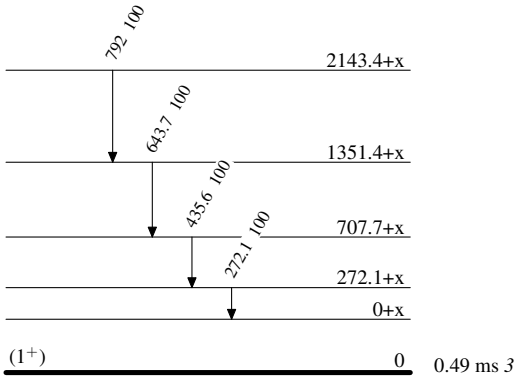
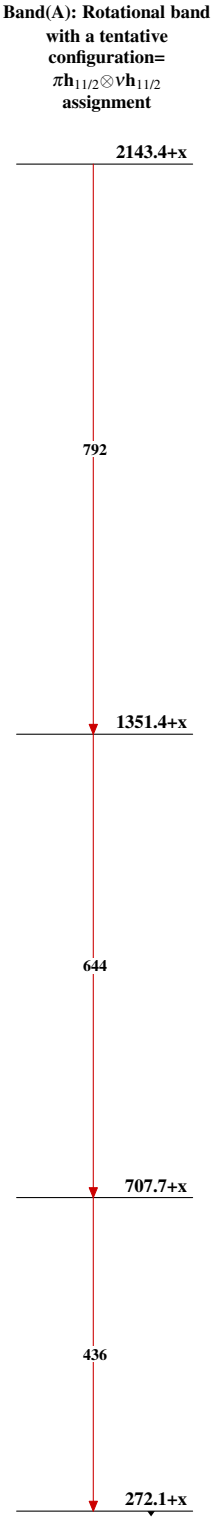
Level Scheme

Intensities: Relative photon branching from each level



$^{112}_{55}Cs_{57}$

Adopted Levels, Gammas



$^{112}_{55}Cs_{57}$