Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 141, 1 (2017)	1-Feb-2017

Q(β^-)=3434 *10*; S(n)=5868 *11*; S(p)=7867 *11*; Q(α)=−1.17×10^3 *5* 2017Wa10
S(2n)=13315 *11*; S(2p)=17669 *11* 2017Wa10
Additional information 1.

^{158}Eu Levels

Cross Reference (XREF) Flags

A ^{158}Sm β^- decay
B ^{252}Cf SF decay

E(level)[†‡]	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	(1$^-$)	45.9 min *2*	AB	%β^-=100 μ=+1.44 *2*; Q=+0.66 *14* Evaluated RMS charge radius: <r^2>$^{1/2}$=5.1413 fm *78* (2013An02). J$^\pi$: From expected configuration of π,5/2[413] (assigned to ground state for ^{157}Eu and ^{159}Eu) and ν,3/2[521] (assigned to ground state for ^{159}Gd) (1990Ja11,1978Gr14). The J^π=5$^-$ state from coupling of π,5/2[413] and ν,5/2[642] (assigned to ground state of ^{161}Dy) should be near the ground state (1990Ja11). In the results of the resonance ionization spectroscopy, 1990Al34 list J=1 without discussion. T$_{1/2}$: Weighted average of 45.9 min *2* (1965Mu16), 46 min *1* (1965Sc19), and 45.7 min *5* (1966Da19); other: 45.7 min *10* (1963Da07, replaced by 1966Da19). μ: From resonance ionization spectroscopy. Only the statistical uncertainty is given; other contributions to the uncertainty are believed to be ≤ 10% (1990Al34 and 2014StZZ compilation). Q: From resonance ionization spectroscopy (1990Al34 and 2016St14 evaluation). From 1990Al34, λ(^{158}Eu-^{151}Eu)=0.839 *6* fm^2 directly from table and by differences of values λ(^{158}Eu-^{156}Eu)=0.146 *9* fm^2 and λ(^{158}Eu-^{157}Eu)=0.60 *9* fm^2. Only the statistical uncertainties are given. $\lambda \approx \Delta$<r^2>; see 1990Al34 for exact relationship.

† The γ's, which are all unplaced, are not given here; see ^{158}Sm β- decay.
‡ Levels have been proposed in an unpublished study of the decay of ^{158}Sm and used in the analysis of the total absorption γ spectrum (1997Gr09), but have not been adopted.