Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 185, 2 (2022)	23-Aug-2022

S(n)=11170 *SY*; S(p)=1850 *SY*; Q(α)=3490 *SY* 2021Wa16

Estimated uncertainties (2021Wa16): ΔS(n)=500, ΔS(p)=300, ΔQ(α)=360.

Q(ε)=10610 *360*, Q(εp)=10860 *300*, S(2p)=1300 *300* (syst,2021Wa16). S(2n)=24870 (2019Mo01, theory).

Assignment is from ^{150}Lu proton decay studied by 2003Gi10, 2003Ro21, 2000Gi01, 1993Se04 and 1993Wo03. 2001Xu06 produced ^{149}Yb in ^{112}Sn(^{40}Ca,3n) reaction at E=232 MeV and studied proton-γ coin. See also 2005Xu04 and 2006Xu07 from the same group as 2001Xu06, for some analysis of data.

Theoretical studies: consult the NSR database at www.nndc.bnl.gov/nsr/ for two references for structure and one for radioactive decay listed under 'document records' which can be accessed through web retrieval of the ENSDF database at www.nndc.bnl.gov/ensdf/.

Additional information 1.

^{149}Yb Levels

Cross Reference (XREF) Flags

A ^{150}Lu p decay (45 ms)
B ^{150}Lu p decay (43 μs)

E(level)	J^π	$T_{1/2}$	XREF	Comments
0	(1/2$^+$)	0.7 s *2*	AB	%ε+%β^+=100; %εp>0 %εp: relative ε-delayed proton branching ratio to ^{148}Er g.s. is estimated (from statistical model calculations) as 78% and 75% for J^π(^{149}Yb g.s.)=1/2$^+$ and 1/2$^-$, respectively. From this value 2001Xu06 state that delayed proton branch to first 2$^+$ state in ^{148}Er is >25%. E(level): assignment as the ground state remains to be confirmed. J^π: ^{149}Yb (possibly the g.s.) is populated in the proton decay of ^{150}Lu through L=(5) proton from $h_{11/2}$ proton orbital in ^{150}Lu and through L=(2) proton from $d_{3/2}$ proton orbital in ^{150}Lu isomer. 2001Xu06 proposed 1/2, 2005Xu04 suggested 1/2$^+$ or and 1/2$^-$, while 2006Xu07 assigned 1/2$^-$ from structure calculations, with the assignment of the g.s. configuration=ν1/2[521]. Probable $s_{1/2}$ neutron state (2003Gi10) or $d_{3/2}$ state (2000Gi01). 2019Mo01 predict Ω(n)=1/2$^-$. 2021Ko07 assigned (1/2$^+$) while noting that no 1/2$^-$ g.s. or isomer state had been found for even Z, odd N in this region. $T_{1/2}$: from timing of (647γ)(2.5-6.4 MeV delayed protons) coin (2001Xu06, 2005Xu04). The 647γ is ground-state transition from first 2$^+$ state of ^{148}Er produced in εp decay of ^{149}Yb. It should be noted however that ^{148}Tm g.s. half-life is also 0.7 s *2* as determined by 1982No08 from ^{148}Tm ε decay to ^{148}Er.