Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. M. Baglin[1], E. A. Mccutchan[2], S. Basunia[1]	NDS 153, 1 (2018)	1-Oct-2018

Q(β^-)=3870 *50*; S(n)=5510 *50*; S(p)=7.93×10^3 *30*; Q(α)=−780 *90* 2017Wa10
S(n2)=12320 *58*; S(2p)=18090 (syst) *300* (2017Wa10).
See 2012Dz01 for production of ^{170}Ho (2.76 min) using ^{170}Er(n,p).

^{170}Ho Levels

The first excited state in this nucleus is predicted to be a 4$^-$ state with configuration(π 3/2[411])+(ν 5/2[512]) close to the ground state, with the corresponding 1$^-$ member expected well above the 1$^+$ isomer (1983So02).

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	(6$^+$)	2.76 min *5*	%β^-=100 J$^\pi$: from systematics; neighboring Z=67 and N=103 odd nuclei have g.s. configurations of (π 7/2[523]) and (ν 5/2[512]), respectively, so configuration (π 7/2[523])+(ν 5/2[512])6$^+$ is expected for ^{170}Ho g.s. (assuming Gallagher-Moszkowski rule). T$_{1/2}$: from γ(t) (1978Ka16). Others: 2.8 min *2* (1974Ka21), 2.9 min (1969Sc01).
120 *70*	(1$^+$)	43 s *2*	%β^-=100 %β^-: no isomeric transition observed in 1974Ka21. E(level): from difference in endpoint energies in ^{170}Ho β^- decay (43 s) and ^{170}Ho β^- decay (2.76 min) (1978Tu04). J$^\pi$: log $f^{1u}t$<8.5 to 0$^+$ g.s. and/or (0$^+$) 891 level of ^{170}Er, independent of assumptions about magnitude of β^- branch to g.s. in ^{170}Ho β^- decay (43 s), so J=0,1 is probable; nonzero β^- feeding of 2$^+$ 79-keV level (though imprecisely determined) rules out 0$^+$ and probably 0$^-$ (log $f^{1u}t$<8.5 if β^- branch to 2$^+$ is≥7%); J$^\pi$ systematics in neighboring nuclei favor J$^\pi$=1$^+$, with configuration=((π 7/2[523])-(ν 5/2[512]))1$^+$ (1978Tu04). T$_{1/2}$: from γ(t) (1974Ka21). Others: 40 s *10* (1960Wi10), 45 s *5* (1961Ta08), 44 s *5* (1963Ka10), 42 s *3* (1969Sc01).