^{170}Au α decay (0.62 ms) 2004Ke06,2002Ma61

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 1103 (2008)	1-Mar-2008

Parent: ^{170}Au: E=275 *12*; J^π=(9^+); $T_{1/2}$=0.62 ms *+5−4*; Q(α)=7170 *10*; %α decay=42 *5*

^{170}Au-%α decay: based on %p(^{170}Au)=58 *5* In fig. 6 and table III of 2004Ke06 (but reported As 59 *6* In text). Other %p: 75 *15* (misprinted As 0.75 *15*) from 2002Ma61; from simultaneous observation of 1735-keV proton and 7056-keV α, but that Eα differs significantly from Eα reported In 2004Ke06.

2004Ke06: source from ^{96}Ru(^{78}Kr,p3n), E(^{78}Kr)=385 MeV; tof and energy-loss gas detector and position-sensitive focal plane detector; observed correlated recoil-proton-α decay chain; measured $T_{1/2}$, %p, Eα for ^{170}Au α decay, α-α correlations.

2002Ma61: source from ^{96}Ru(^{78}Kr,p3n), E(^{78}Kr)=400 MeV; fragment mass analyzer, gas-filled position sensitive parallel-grid counter, double-sided Si strip detector; measured E(p), Eα, %p, parent $T_{1/2}$.

Parent J^π: unhindered (HF<4) α decay to (9^+) ^{166}Ir.

^{166}Ir Levels

E(level)	J^π[†]	Comments
172 *6*	(9^+)	E(level): from 2004Ke06.

[†] From Adopted Levels.

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
7107 *6*	172	100	2.6 *4*	Eα: from 2004Ke06. other Eα: 7056 *15* (2002Ma61); reason for discrepant value is unknown. Iα: only one α group has been observed. correlated with known excited-state α decays from ^{166}Ir, ^{162}Re and ^{158}Ta (2004Ke06).

[†] If r_0=1.56 *1*, estimated from $r_0(^{164}Os)$=1.554 *17* (1998Ak04), $r_0(^{166}Os)$=1.5638 *12* (this evaluation), $r_0(^{168}Pt)\approx$1.55; $r_0(^{166}Pt)$ not known; Q(α)=7170 *10* (from Eα=7001 *10* for g.s. to g.s. decay); $T_{1/2}$=0.62 ms *+5−4* from combination of p(t) and α(t) data (2004Ke06) (other value: 0.57 ms *+31−15* (2002Ma61)).

[‡] For absolute intensity per 100 decays, multiply by 0.42 *5*.