

^{218}U α decay (0.56 ms) 2005Le42,2007Le14

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu and E. A. Mccutchan		NDS 175, 1 (2021)	1-May-2021

Parent: ^{218}U : E=2105; $J^\pi=(8^+)$; $T_{1/2}=0.56$ ms +26-14; $Q(\alpha)=8775$ 9; % α decay=100.0

^{218}U -Q(α): from 2021Wa16.

^{218}U -E, J^π , $T_{1/2}$: from Adopted Levels of ^{218}U (2019Si39).

2005Le42,2007Le14: $^{218\text{m}}\text{U}$ was produced in $^{182}\text{W}(^{40}\text{Ar},4n)$ reaction with a beam at 186 MeV; evaporation residues (ER) were separated in-flight by the RITU gas-filled separator and implanted into the PAD or DSSD silicon detectors at the focal plane. E_α and $T_{1/2}$ were measured by ER- α - α time and position correlations.

 ^{214}Th Levels

E(level)	J^π	Comments
0.0	0^+	
606?	(2^+)	E(level): estimated from $E(\alpha)=10083$ keV (2007Le14).
x?	(8^+)	No events were observed but the α transition is possible. Tentatively assigned in 2007Le14.

 α radiations

E_α	E(level)	I_α^\ddagger	HF †	Comments
10083	606?			Assignment is uncertain with two events of incomplete α - α - α chains with probability of being random smaller than 10^{-6} , associated with $T_{1/2}=0.27$ ms (2007Le14).
10678 17	0.0	100	310	L=8 transition, possibly from $\pi h_{9/2} \pi f_{7/2} (8^+)$ to $\pi h_{9/2}^2 (0^+)$ (2007Le14). HF: from 2007Le14.

† Using $r_0(^{214}\text{Th})=1.512$ 17 calculated from $\text{HF}(8612\alpha)=1.0$.

‡ Absolute intensity per 100 decays.