

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev		NDS 126, 373 (2015)	30-Sep-2013

S(n)=8210 90; S(p)= 1.51×10^3 10; Q(α)=8270 50 [2012Wa38](#)

 ^{209}Th Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0+x	(13/2 ⁺)	2.5 ms +17-7	<p>$\% \alpha \approx 100$</p> <p>E(α)=8123 25 keV (2010He25) and 8080 keV 50 (1996Ik01).</p> <p>E(level): given the proposed $J^\pi=(13/2^+)$ this is most likely an isomeric state, based on systematics in neighboring N=119 isotones: ^{207}Ra (E=554 keV, 59 ms), ^{205}Rn(657 keV, >10 s), ^{203}Po (611 keV, 45 s) and ^{201}Pb(629 keV, 60.8 s), thus $x \approx 600$ keV 200. $J^\pi=(5/2^-)$ would be expected for the ground state from systematics, while $J^\pi=1/2^-$ is predicted in 1997Mo25.</p> <p>J^π: E($\alpha 1$)=(8123α, ^{209}Th)-E($\alpha 2$)(7379α, ^{205}Ra)-E($\alpha 3$)(6787α, ^{201}Rn)- E($\alpha 4$)(6384α, ^{197}Po) correlations (2010He25) suggest favored α decays via the chain of $J^\pi=(13/2^+)$ isomers in ^{205}Ra, ^{201}Rn and ^{197}Po.</p> <p>$T_{1/2}$: deduced by 2010He25 by coupling together four events from 2010He25 and two events from 1996Ik01. $T_{1/2}=1.9$ ms +19-7 using the four events in 2010He25 and 3.8 ms +69-15 using the two events in 1996Ik01.</p> <p>configuration: $\nu(i_{13/2})^{-1}$. The assignment is tentative.</p>