Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 195,368 (2024)	1-Dec-2023

S(p)=−1138 *21*; Q(α)=7822 *14* 2021Wa16
Identification: Observation of recoil-α-α correlations with ^{187}Bi in the reaction ^{141}Pr(^{54}Fe,4n)^{191}At (2002LeZZ).

Observation of alpha decay in fusion-evaporation measurements using the ^{141}Pr(^{54}Fe,4n) reaction at E=248-266 MeV, at mid-target. Gas-filled recoil fragment separator RITU. Recoil and α detection by position-sensitive Si strip detector (2003Ke08,2005Ke10).

Other references: 2005Ke10, 2005Uu03.

^{191}At Levels

Levels proposed on the basis of recoil-tagged α-α coincidences, measured E(α), and considering α-decay links to levels in the daughter nuclide ^{187}Bi. No γ-rays from ^{187}Bi were observed due to poor statistics (2003Ke08).

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	(1/2$^+$)	1.7 ms *+11−5*	%α≈100 (2003Ke08) Proposed as the ^{191}At g.s. in 2003Ke08, 2005Ke10. This state decays by Eα=7552 keV *11*, ≈100% α branching, HF=0.4 *3*, to the ≈112 keV (1/2$^+$) level in ^{187}Bi (2003Ke08). This is similar to the case of the neighboring ^{193}At ground state. A reduced α decay width of δ^2=150 keV *100* is quoted in 2003Ke08 (see also 2005Uu03) for this transition. J$^\pi$: Proposed by authors of 2003Ke08, based on unhindered, HF=0.4 *3*, 7552α transition to the ≈112 keV (1/2$^+$) level in ^{187}Bi. Proposed configuration: π $(s_{1/2})^{-1}$ (2003Ke08, 2005Ke10). T$_{1/2}$: From 2003Ke08, perhaps from 7552α(t) (not stated).
58 *20*	(7/2$^-$)	2.1 ms *+4−3*	%α≈100 (2003Ke08) This level decays by Eα=7653 keV *13*, Iα=98% *2*, HF=1.1 *3*, to the ≈63 keV (7/2$^-$) level in ^{187}Bi, and Eα=7715 keV *15*, Iα=2% *2*, HF=50 *50* to the (9/2$^-$) ^{187}Bi ground state (2003Ke08). A reduced α decay width of δ^2=59 *13* and 1.3 *13* keV is reported in 2003Ke08 for the 7653 and 7715 keV α transitions, respectively (also in 2005Uu03 for the former transition). E(level): Deduced by evaluator using Eα=7715 keV *15* to the g.s. of ^{187}Bi and Qα=7822 keV *14*. Same value in 2021Ko07 − NUBASE. J$^\pi$: Proposed by the authors of 2003Ke08, based on the unhindered, HF=1.1 *3*, 7653α transition to the ≈63−keV (7/2$^-$) level in ^{187}Bi. The value of HF=74 *80* for the 7715 keV α indicates a probable ΔL=2 character for the decay from this level to the ^{187}Bi ground state. For this level the proposed J^π value is assumed to derive from a 7/2$^-$[514] Nilsson state, associated with a slightly oblate shape (2003Ke08). T$_{1/2}$: From 2003Ke08, determined from 42 ER-α_m correlated decay chain time distribution with an alpha-decay energy greater than 7640 keV.