

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 187,355 (2023)	20-Sep-2022

Q(β⁻)=-8348 22; S(n)=10620 30; S(p)=-300 11; Q(α)=7519 4 [2021Wa16](#)

²⁰¹Fr Levels

Cross Reference (XREF) Flags

- A** ²⁰⁵Ac α decay
- B** (HI,xnγ)

E(level)	J ^π	T _{1/2}	XREF	Comments
0	9/2 ⁻	63 ms 4	AB	%α≈100 J ^π : Favored α decay to ¹⁹⁷ At (J ^π =9/2 ⁻ , 2018Cu02) and subsequent favored α decay to ¹⁹³ Bi (J ^π =9/2 ⁻ , 2016Ba42). T _{1/2} : Weighted average of 64 ms 3 (2014Ka23), 53 ms 4 (2005Uu02), and 67 ms 3 (2005De01). Others: 48 ms 15 (1980Ew03) and 69 ms +16-11 (1996En01). Eα1=7369 keV 5 (2014Ka23); Eα1=7369 keV 8, correlated with Eα2(¹⁹⁷ At)=6959 keV 6 (2005Uu02); Eα1=7379 keV 7 (2005De01); Eα1=7361 keV 7, correlated with Eα2(¹⁹⁷ At)=6956 keV 5 (1996En01); Eα1=7388 keV 15 (1980Ew03). configuration: π h _{9/2} ⁺¹ .
129 10	1/2 ⁺	37 ms +14-8	B	%α=100 E(level): From 2021Ko07 . J ^π : Favored α decay to ^{197m} At (J ^π =1/2 ⁺ , 2018Cu02) and subsequent favored α decay to ^{193m} Bi (J ^π =1/2 ⁺ , 2016Ba42). T _{1/2} : From α(t) in 2020Au01 (14 α1-α2-α3 correlated events). Others: 8 ms +12-3 (2014Ka23) and 19 ms +19-6 (2005Uu02). Eα1=7457 keV 9 (2020Au01); Eα1=7445 keV 8 correlated with Eα2(¹⁹⁷ At)=6698 keV 16 (2014Ka23); Eα1=7454 keV 8 (2005Uu02). configuration: π s _{1/2} ⁻¹ .
289.5 4	13/2 ⁺	720 ns 40	B	%IT=100 E(level): From Eγ in 2020Au01 . J ^π : 289.5γ M2 to 9/2 ⁻ ; systematics in the region. T _{1/2} : From ce(t) in 2020Au01 . Others: 0.7 μs +5-2 (2014Ka23). configuration: π i _{13/2} ⁺¹ .

γ(²⁰¹Fr)

E _i (level)	J _i ^π	E _γ	I _γ	E _f	J _f ^π	Mult.	α [†]	Comments
289.5	13/2 ⁺	289.5 4	100	0	9/2 ⁻	M2	2.60 4	B(M2)(W.u.)=0.172 +11-9 α(K)=1.899 28; α(L)=0.524 8; α(M)=0.1321 20 α(N)=0.0350 5; α(O)=0.00779 12; α(P)=0.001223 18; α(Q)=6.33×10 ⁻⁵ 9 E _γ ,I _γ : From 2020Au01 . Mult.: From K/LMN+=3.0 9 in 2020Au01 .

† Additional information 1.

Adopted Levels, GammasLevel Scheme

Intensities: Relative photon branching from each level

