

**Adopted Levels, Gammas**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov and A. Rodionov, F. G. Kondev		NDS 112,855 (2011)	31-Oct-2010
Q(β <sup>-</sup> )=427.4 24; S(n)=6435.9 24; S(p)=9229 5; Q(α)=-3064 3		2012Wa38		
Note: Current evaluation has used the following Q record 427.4	246436.1 24 9235	6		2009AuZZ.

<sup>133</sup>Xe Levels

Cross Reference (XREF) Flags

<b>A</b>	<sup>133</sup> Xe IT decay (2.198 d)	<b>D</b>	<sup>2</sup> H( <sup>132</sup> Xe,p)
<b>B</b>	<sup>133</sup> I β <sup>-</sup> decay (20.83 h)	<b>E</b>	<sup>134</sup> Xe(d,t) E=15 MeV
<b>C</b>	<sup>130</sup> Te(α,nγ)		

E(level) <sup>†</sup>	J <sup>π</sup>	T <sub>1/2</sub>	XREF	Comments
0.0	3/2 <sup>+</sup>	5.2475 d 5	ABCDE	%β <sup>-</sup> =100 Q=+0.142 5 (1990NeZY) J <sup>π</sup> : optical spectroscopy (1978Hu04), L=2 in (d,t) and ( <sup>132</sup> Xe,p). T <sub>1/2</sub> : from 2002Un02. Others: 5.25 d 2 (1975Ho18), 5.250 d 13 (1975Wo10), 5.245 d 6 (1974Ca27), 5.29 d 1 (1972Em01), 5.270 d 2 (1950Ma15), 5.312 d 25 (1968Al16). μ: +0.81340 7 (1986Ki18), +0.8129 5 (1990NeZY), and +0.8137 3 (1985Ca02). configuration: ν(d <sub>3/2</sub> <sup>-1</sup> ).
233.221 <sup>‡</sup> 15	11/2 <sup>-</sup>	2.198 d 13	ABC E	%IT=100 Q=+0.77 3 (1990NeZY) J <sup>π</sup> : 233.221γ M4+E5 to 3/2 <sup>+</sup> ; L=(5) in (d,t). T <sub>1/2</sub> : weighted average of 2.19 d 5 (1975Ho18), 2.188 d 8 (1974FoZY), 2.191 d 30 (1968Al16), 2.26 d 2 (1961Er04), 2.30 d 8 (1951Be11). μ: -1.08247 15 (1986Ki18) and -1.08279 45 (1985Ca02). configuration: ν(h <sub>11/2</sub> <sup>-1</sup> ).
262.702 6	1/2 <sup>+</sup>		BC E	XREF: E(250). configuration: ν(s <sub>1/2</sub> <sup>-1</sup> ). J <sup>π</sup> : 262.702γ M1 to 3/2 <sup>+</sup> ; L=(0) in (d,t).
529.872 3	5/2 <sup>+</sup>		BC	J <sup>π</sup> : 267.173γ E2 to 1/2 <sup>+</sup> , 529.872γ M1+E2 to 3/2 <sup>+</sup> ; direct population in <sup>133</sup> I β <sup>-</sup> decay (J <sup>π</sup> (g.s.)=7/2 <sup>+</sup> ). configuration: Dominant ν(d <sub>3/2</sub> <sup>-1</sup> ).
607.87 17	5/2 <sup>+</sup>		C	J <sup>π</sup> : 607.9γ ΔJ=1 M1 to 3/2 <sup>+</sup> .
680.254 9	3/2 <sup>+</sup>		BC	J <sup>π</sup> : 417.56γ M1+E2 to 1/2 <sup>+</sup> .
743.752 16	9/2 <sup>-</sup>		BC	J <sup>π</sup> : 510.530γ M1+E2 to 11/2 <sup>-</sup> ; direct population in <sup>133</sup> I β <sup>-</sup> decay (J(g.s.)=7/2 <sup>+</sup> ).
875.328 9	7/2 <sup>+</sup>		BC	J <sup>π</sup> : 875.329γ E2 to 3/2 <sup>+</sup> , 345.43γ to 5/2 <sup>+</sup> . configuration: a mixture between ν(g <sub>7/2</sub> ) <sup>-1</sup> and ν(d <sub>3/2</sub> ) <sup>-1</sup> ⊗2 <sup>+</sup> .
911.45 3	3/2 <sup>+</sup>		BC	J <sup>π</sup> : 648.76γ M1 to 1/2 <sup>+</sup> , 381.59γ M1+E2 to 5/2 <sup>+</sup> .
928.52 <sup>‡</sup> 20	15/2 <sup>-</sup>		C	J <sup>π</sup> : 6953γ E2 to 11/2 <sup>-</sup> .
1052.297 17	5/2 <sup>+</sup>		BC	J <sup>π</sup> : 1052.296γ M1+E2 to 3/2 <sup>+</sup> , 798.59γ (E2) to 1/2 <sup>+</sup> ; direct population in <sup>133</sup> I β <sup>-</sup> decay (J(g.s.)=7/2 <sup>+</sup> ).
1071.04 17	7/2 <sup>+</sup>		C	J <sup>π</sup> : 463.2γ M1 to 5/2 <sup>+</sup> , 1071.0γ (E2) to 3/2 <sup>+</sup> . configuration: a mixture between ν(g <sub>7/2</sub> ) <sup>-1</sup> and ν(d <sub>3/2</sub> ) <sup>-1</sup> ⊗2 <sup>+</sup> .
1169.52 20	13/2 <sup>-</sup>		C	J <sup>π</sup> : 936.3γ M1 to 11/2 <sup>-</sup> .
1236.449 5	7/2 <sup>+</sup>		B	J <sup>π</sup> : 1236.441γ E2 to 3/2 <sup>+</sup> , 706.578γ M1+E2 to 5/2 <sup>+</sup> .
1298.233 5	5/2 <sup>+</sup>		B	J <sup>π</sup> : 422.910γ M1+E2 to 7/2 <sup>+</sup> , 1035.58γ to 1/2 <sup>+</sup> .
1350.380 17	5/2 <sup>+</sup>		BC	J <sup>π</sup> : 1350.38γ M1+E2 to 3/2 <sup>+</sup> , 1087.71γ to 1/2 <sup>+</sup> , 820.506γ M1+E2 to 5/2 <sup>+</sup> ; direct population in <sup>133</sup> I β <sup>-</sup> decay (J(g.s.)=7/2 <sup>+</sup> ).
1386.153 8	7/2 <sup>+</sup>		BC	J <sup>π</sup> : 856.278γ M1+E2 to 5/2 <sup>+</sup> , 1386.15γ to 3/2 <sup>+</sup> ; direct population in <sup>133</sup> I β <sup>-</sup> decay (J(g.s.)=7/2 <sup>+</sup> ). In 1983Lo08 (α,nγ): J=9/2 <sup>+</sup> deduced from γ(θ) and

Continued on next page (footnotes at end of table)

**Adopted Levels, Gammas (continued)** $^{133}\text{Xe}$  Levels (continued)

<u>E(level)<sup>†</sup></u>	<u>J<sup>π</sup></u>	<u>XREF</u>	<u>Comments</u>
			mult=E2 for 856.278γ and $\alpha_K(\text{exp})=0.0024$ 9, which is consistent with both E2 and M1. 1386.15γ to g.s. could not be observed in this work, because of lower efficiency compared to $^{133}\text{I}$ $\beta^-$ decay (1976Me16) data.
1589.94 3	5/2 <sup>+</sup>	BCD	J <sup>π</sup> : L=2 in (d,p); 909.67γ M1+E2 to 3/2 <sup>+</sup> , 1060.07γ M1+E2, $\Delta J=0$ to 5/2 <sup>+</sup> .
1609.30 17	9/2 <sup>+</sup>	C	J <sup>π</sup> : 734.0γ M1+E2 to 7/2 <sup>+</sup> .
1701.4 3	(7/2)	C	J <sup>π</sup> : 1093.5γ D to 5/2 <sup>+</sup> .
1716.4 3	15/2 <sup>-</sup>	C	J <sup>π</sup> : 546.9γ (M1) $\Delta J=1$ to 13/2 <sup>-</sup> .
1743.75 20	11/2 <sup>+</sup>	C	J <sup>π</sup> : 357.6γ (E2) to 7/2 <sup>+</sup> .
1789.58 17	9/2 <sup>+</sup>	C	J <sup>π</sup> : 403.4γ M1+E2, $\Delta J=1$ to 7/2 <sup>+</sup> .
1861.8 3	9/2 <sup>+</sup>	C	J <sup>π</sup> : 790.8γ M1+E2, $\Delta J=1$ to 7/2 <sup>+</sup> .
1876.3 <sup>‡</sup> 3	19/2 <sup>-</sup>	C	J <sup>π</sup> : 947.8γ E2 to 15/2 <sup>-</sup> .
2062.0 3	13/2 <sup>+</sup>	C	J <sup>π</sup> : 452.7γ E2 to 9/2 <sup>+</sup> .
2092.75 20	(9/2) <sup>-</sup>	C	J <sup>π</sup> : 706.6γ E1 to 7/2 <sup>+</sup> .
2123.7 4	23/2 <sup>-</sup>	C	J <sup>π</sup> : 247.4γ E2 to 19/2 <sup>-</sup> .
3000	(7/2 <sup>+</sup> )	D	configuration: Probable 3-qp configuration= $\nu(\text{h}_{11/2}^{-3})$ . J <sup>π</sup> : L=(4) in ( $^{132}\text{Xe}$ ,p).

<sup>†</sup> From a least-squares fit to Eγ's.

<sup>‡</sup> Band(A): Weakly deformed band based on the  $\nu(\text{h}_{11/2}^{-1})$  configuration.

Adopted Levels, Gammas (continued)

$\gamma(^{133}\text{Xe})$									
$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\ddagger$	$I_\gamma^\ddagger$	$E_f$	$J_f^\pi$	Mult. @	$\delta^@$	$\alpha^\ddagger$	Comments
233.221	11/2 <sup>-</sup>	233.221 15	100	0.0	3/2 <sup>+</sup>	M4+E5	0.10 8	8.88 15	$\alpha(\text{K})=6.22 \ 10$ ; $\alpha(\text{L})=2.08 \ 11$ ; $\alpha(\text{M})=0.46 \ 3$ ; $\alpha(\text{N+..})=0.106 \ 6$ $\alpha(\text{N})=0.095 \ 5$ ; $\alpha(\text{O})=0.0106 \ 5$ B(M4)(W.u.)=3.09 7; B(E5)(W.u.)=1.1×10 <sup>3</sup> +19-11 Mult., $\delta$ : from <sup>133</sup> Xe IT decay (2.198 d).
262.702	1/2 <sup>+</sup>	262.702 6	100	0.0	3/2 <sup>+</sup>	M1		0.0577	$\alpha(\text{K})=0.0497 \ 7$ ; $\alpha(\text{L})=0.00641 \ 9$ ; $\alpha(\text{M})=0.001300 \ 19$ ; $\alpha(\text{N+..})=0.000303 \ 5$
529.872	5/2 <sup>+</sup>	267.173 19	0.135 7	262.702	1/2 <sup>+</sup>	E2		0.0609	$\alpha(\text{N})=0.000269 \ 4$ ; $\alpha(\text{O})=3.37\times 10^{-5} \ 5$ $\alpha(\text{K})=0.0497 \ 7$ ; $\alpha(\text{L})=0.00895 \ 13$ ; $\alpha(\text{M})=0.00186 \ 3$ ; $\alpha(\text{N+..})=0.000418 \ 6$
		529.872 3	100 2	0.0	3/2 <sup>+</sup>	M1+E2	+1.85 20	0.00810 15	$\alpha(\text{N})=0.000376 \ 6$ ; $\alpha(\text{O})=4.26\times 10^{-5} \ 6$ $\alpha(\text{K})=0.00691 \ 13$ ; $\alpha(\text{L})=0.000956 \ 15$ ; $\alpha(\text{M})=0.000195 \ 3$ ; $\alpha(\text{N+..})=4.49\times 10^{-5} \ 7$
607.87	5/2 <sup>+</sup>	607.9# 2	100#	0.0	3/2 <sup>+</sup>	M1		0.00691 10	$\alpha(\text{N})=4.00\times 10^{-5} \ 6$ ; $\alpha(\text{O})=4.87\times 10^{-6} \ 8$ $\alpha(\text{K})=0.00597 \ 9$ ; $\alpha(\text{L})=0.000749 \ 11$ ; $\alpha(\text{M})=0.0001515 \ 22$ ; $\alpha(\text{N+..})=3.53\times 10^{-5} \ 5$
680.254	3/2 <sup>+</sup>	150.39 417.56	4.6 9 23.7 16	529.872 262.702	5/2 <sup>+</sup> 1/2 <sup>+</sup>	M1+E2	+1.0 13	0.0163 11	$\alpha(\text{N})=3.14\times 10^{-5} \ 5$ ; $\alpha(\text{O})=3.95\times 10^{-6} \ 6$ $\alpha(\text{K})=0.0139 \ 11$ ; $\alpha(\text{L})=0.00192 \ 3$ ; $\alpha(\text{M})=0.000392 \ 7$ ; $\alpha(\text{N+..})=9.04\times 10^{-5} \ 13$
		680.247 11	100 3	0.0	3/2 <sup>+</sup>	M1		0.00527 8	$\alpha(\text{N})=8.05\times 10^{-5} \ 12$ ; $\alpha(\text{O})=9.8\times 10^{-6} \ 3$ $\alpha(\text{K})=0.00456 \ 7$ ; $\alpha(\text{L})=0.000570 \ 8$ ; $\alpha(\text{M})=0.0001152 \ 17$ ; $\alpha(\text{N+..})=2.69\times 10^{-5} \ 4$
743.752	9/2 <sup>-</sup>	510.530 4	100	233.221	11/2 <sup>-</sup>	M1+E2		0.0095 11	$\alpha(\text{N})=2.39\times 10^{-5} \ 4$ ; $\alpha(\text{O})=3.00\times 10^{-6} \ 5$ $\alpha(\text{K})=0.0082 \ 10$ ; $\alpha(\text{L})=0.00109 \ 6$ ; $\alpha(\text{M})=0.000223 \ 12$ ; $\alpha(\text{N+..})=5.2\times 10^{-5} \ 3$
875.328	7/2 <sup>+</sup>	345.43 5 875.329 11	2.3 4 100 2	529.872 0.0	5/2 <sup>+</sup> 3/2 <sup>+</sup>	E2		0.00218 3	$\alpha(\text{N})=4.6\times 10^{-5} \ 3$ ; $\alpha(\text{O})=5.6\times 10^{-6} \ 5$ $\alpha(\text{K})=0.00188 \ 3$ ; $\alpha(\text{L})=0.000245 \ 4$ ; $\alpha(\text{M})=4.96\times 10^{-5} \ 7$ ; $\alpha(\text{N+..})=1.149\times 10^{-5} \ 16$
911.45	3/2 <sup>+</sup>	381.59 7	80 8	529.872	5/2 <sup>+</sup>	M1+E2		0.0208 12	$\alpha(\text{N})=1.022\times 10^{-5} \ 15$ ; $\alpha(\text{O})=1.262\times 10^{-6} \ 18$ $\alpha(\text{K})=0.0177 \ 13$ ; $\alpha(\text{L})=0.00250 \ 10$ ; $\alpha(\text{M})=0.000510 \ 23$ ; $\alpha(\text{N+..})=0.000117 \ 4$
		648.76 6	100 20	262.702	1/2 <sup>+</sup>	M1		0.00590 9	$\alpha(\text{N})=0.000105 \ 4$ ; $\alpha(\text{O})=1.270\times 10^{-5} \ 18$ $I_\gamma$ : 25 8 from <sup>130</sup> Te( $\alpha$ , $\gamma$ ). $\alpha(\text{K})=0.00510 \ 8$ ; $\alpha(\text{L})=0.000639 \ 9$ ; $\alpha(\text{M})=0.0001292 \ 18$ ; $\alpha(\text{N+..})=3.01\times 10^{-5} \ 5$
		911.49 5	82 11	0.0	3/2 <sup>+</sup>	M1+E2		0.0023 4	$\alpha(\text{N})=2.68\times 10^{-5} \ 4$ ; $\alpha(\text{O})=3.37\times 10^{-6} \ 5$ $I_\gamma$ : 30 8 from <sup>130</sup> Te( $\alpha$ , $\gamma$ ). $\alpha(\text{K})=0.0020 \ 3$ ; $\alpha(\text{L})=0.00025 \ 4$ ; $\alpha(\text{M})=5.1\times 10^{-5} \ 7$ ;

**Adopted Levels, Gammas (continued)**

$\gamma(^{133}\text{Xe})$  (continued)

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\ddagger$	$I_\gamma^\ddagger$	$E_f$	$J_f^\pi$	Mult. @	$\delta^@$	$\alpha^\dagger$	Comments
928.52	15/2 <sup>-</sup>	695.3 <sup>#</sup> 2	100 <sup>#</sup>	233.221	11/2 <sup>-</sup>	E2		0.00377 6	$\alpha(\text{N+..})=1.19\times 10^{-5}$ 15 $\alpha(\text{N})=1.06\times 10^{-5}$ 14; $\alpha(\text{O})=1.32\times 10^{-6}$ 18 $\alpha(\text{K})=0.00323$ 5; $\alpha(\text{L})=0.000436$ 7; $\alpha(\text{M})=8.87\times 10^{-5}$ 13; $\alpha(\text{N+..})=2.05\times 10^{-5}$ 3 $\alpha(\text{N})=1.82\times 10^{-5}$ 3; $\alpha(\text{O})=2.23\times 10^{-6}$ 4
1052.297	5/2 <sup>+</sup>	372.05 15 522.4 <sup>&amp;</sup> 789.59 6	1.7 9 $\leq 15$ 9.1 6	680.254 3/2 <sup>+</sup> 529.872 5/2 <sup>+</sup> 262.702 1/2 <sup>+</sup>		(E2)		0.00277 4	$\alpha(\text{K})=0.00238$ 4; $\alpha(\text{L})=0.000315$ 5; $\alpha(\text{M})=6.39\times 10^{-5}$ 9; $\alpha(\text{N+..})=1.478\times 10^{-5}$ 21 $\alpha(\text{N})=1.316\times 10^{-5}$ 19; $\alpha(\text{O})=1.618\times 10^{-6}$ 23 $I_\gamma$ : 91 18 from <sup>130</sup> Te( $\alpha,\text{n}\gamma$ ). $\alpha(\text{K})=0.00145$ 20; $\alpha(\text{L})=0.000182$ 23; $\alpha(\text{M})=3.7\times 10^{-5}$ 5; $\alpha(\text{N+..})=8.5\times 10^{-6}$ 11 $\alpha(\text{N})=7.6\times 10^{-6}$ 10; $\alpha(\text{O})=9.5\times 10^{-7}$ 13 $\delta$ : +0.18 2 or -9.0 15.
		1052.296 18	100 3	0.0	3/2 <sup>+</sup>	M1+E2		0.00168 23	
1071.04	7/2 <sup>+</sup>	463.2 <sup>#</sup> 2	100 <sup>#</sup> 20	607.87	5/2 <sup>+</sup>	M1		0.01346	$\alpha(\text{K})=0.01163$ 17; $\alpha(\text{L})=0.001472$ 21; $\alpha(\text{M})=0.000298$ 5; $\alpha(\text{N+..})=6.95\times 10^{-5}$ 10 $\alpha(\text{N})=6.17\times 10^{-5}$ 9; $\alpha(\text{O})=7.75\times 10^{-6}$ 11
		1071.0 <sup>#</sup> 2	100 <sup>#</sup> 20	0.0	3/2 <sup>+</sup>	(E2)		0.001398 20	$\alpha(\text{K})=0.001206$ 17; $\alpha(\text{L})=0.0001534$ 22; $\alpha(\text{M})=3.10\times 10^{-5}$ 5; $\alpha(\text{N+..})=7.21\times 10^{-6}$ $\alpha(\text{N})=6.41\times 10^{-6}$ 9; $\alpha(\text{O})=7.96\times 10^{-7}$ 12
1169.52	13/2 <sup>-</sup>	936.3 <sup>#</sup> 2	100 <sup>#</sup>	233.221	11/2 <sup>-</sup>	M1		0.00249 4	$\alpha(\text{K})=0.00216$ 3; $\alpha(\text{L})=0.000267$ 4; $\alpha(\text{M})=5.39\times 10^{-5}$ 8; $\alpha(\text{N+..})=1.257\times 10^{-5}$ 18 $\alpha(\text{N})=1.117\times 10^{-5}$ 16; $\alpha(\text{O})=1.406\times 10^{-6}$ 20
1236.449	7/2 <sup>+</sup>	361.09 5 556.17 8 706.578 8	7.5 23 1.33 17 100.0 23	875.328 7/2 <sup>+</sup> 680.254 3/2 <sup>+</sup> 529.872 5/2 <sup>+</sup>		M1+E2		0.0042 6	$\alpha(\text{K})=0.0036$ 6; $\alpha(\text{L})=0.00047$ 6; $\alpha(\text{M})=9.5\times 10^{-5}$ 11; $\alpha(\text{N+..})=2.21\times 10^{-5}$ 25 $\alpha(\text{N})=1.96\times 10^{-5}$ 22; $\alpha(\text{O})=2.4\times 10^{-6}$ 3 $\delta$ : +0.46 3 or +4.3 4.
		1236.441 6	100.0 23	0.0	3/2 <sup>+</sup>	E2		0.001046 15	$\alpha(\text{K})=0.000895$ 13; $\alpha(\text{L})=0.0001122$ 16; $\alpha(\text{M})=2.27\times 10^{-5}$ 4; $\alpha(\text{N+..})=1.665\times 10^{-5}$ $\alpha(\text{N})=4.69\times 10^{-6}$ 7; $\alpha(\text{O})=5.85\times 10^{-7}$ 9; $\alpha(\text{IPF})=1.138\times 10^{-5}$ 16
1298.233	5/2 <sup>+</sup>	245.95 8 386.85 5 422.910 12	1.5 4 2.52 19 13.3 4	1052.297 5/2 <sup>+</sup> 911.45 3/2 <sup>+</sup> 875.328 7/2 <sup>+</sup>		M1+E2	+1.8 12	0.0151 13	$\alpha(\text{K})=0.0128$ 13; $\alpha(\text{L})=0.00185$ 3; $\alpha(\text{M})=0.000379$ 6;

**Adopted Levels, Gammas (continued)**

$\gamma(^{133}\text{Xe})$  (continued)

$E_i(\text{level})$	$J_i^\pi$	$E_\gamma^\ddagger$	$I_\gamma^\ddagger$	$E_f$	$J_f^\pi$	Mult. <sup>@</sup>	$\delta^@$	$\alpha^\dagger$	Comments
1298.233	5/2 <sup>+</sup>	554.5 <sup>&amp;</sup> 617.974 14	$\leq 0.04$ 23.2 5	743.752 680.254	9/2 <sup>-</sup> 3/2 <sup>+</sup>	M1+E2			$\alpha(\text{N+..})=8.69 \times 10^{-5}$ 13 $\alpha(\text{N})=7.76 \times 10^{-5}$ 11; $\alpha(\text{O})=9.3 \times 10^{-6}$ 4
		768.382 15	19.6 5	529.872	5/2 <sup>+</sup>	M1+E2	+0.6 4	0.00368 24	$\alpha(\text{K})=0.0050$ 7; $\alpha(\text{L})=0.00066$ 6; $\alpha(\text{M})=0.000134$ 12; $\alpha(\text{N+..})=3.1 \times 10^{-5}$ 3 $\alpha(\text{N})=2.8 \times 10^{-5}$ 3; $\alpha(\text{O})=3.4 \times 10^{-6}$ 4 $\delta$ : +0.9 +3-1 or +2.0 5. $\alpha(\text{K})=0.00318$ 22; $\alpha(\text{L})=0.000402$ 22; $\alpha(\text{M})=8.1 \times 10^{-5}$ 5; $\alpha(\text{N+..})=1.89 \times 10^{-5}$ 11 $\alpha(\text{N})=1.68 \times 10^{-5}$ 9; $\alpha(\text{O})=2.11 \times 10^{-6}$ 13
		1035.58 25 1298.223 5	0.37 7 100.0 22	262.702 0.0	1/2 <sup>+</sup> 3/2 <sup>+</sup>	M1+E2	+4.2 3	0.000972 14	$\alpha(\text{K})=0.000822$ 12; $\alpha(\text{L})=0.0001026$ 15; $\alpha(\text{M})=2.07 \times 10^{-5}$ 3; $\alpha(\text{N+..})=2.65 \times 10^{-5}$ $\alpha(\text{N})=4.28 \times 10^{-6}$ 6; $\alpha(\text{O})=5.35 \times 10^{-7}$ 8; $\alpha(\text{IPF})=2.16 \times 10^{-5}$ 3
1350.380	5/2 <sup>+</sup>	438.87 8 670.10 8 820.506 22	26 3 28 3 100 3	911.45 680.254 529.872	3/2 <sup>+</sup> 3/2 <sup>+</sup> 5/2 <sup>+</sup>	M1+E2	+0.8 8	0.0031 4	$\alpha(\text{K})=0.0026$ 3; $\alpha(\text{L})=0.00033$ 3; $\alpha(\text{M})=6.7 \times 10^{-5}$ 6; $\alpha(\text{N+..})=1.57 \times 10^{-5}$ 15 $\alpha(\text{N})=1.40 \times 10^{-5}$ 13; $\alpha(\text{O})=1.74 \times 10^{-6}$ 18 $I_\gamma$ : 55 14 from <sup>130</sup> Te( $\alpha, n\gamma$ ).
		1087.71 10 1350.38 3	7.9 11 97 3	262.702 0.0	1/2 <sup>+</sup> 3/2 <sup>+</sup>	M1+E2		0.00101 12	$\alpha(\text{K})=0.00085$ 10; $\alpha(\text{L})=0.000104$ 12; $\alpha(\text{M})=2.11 \times 10^{-5}$ 23; $\alpha(\text{N+..})=3.74 \times 10^{-5}$ 7 $\alpha(\text{N})=4.4 \times 10^{-6}$ 5; $\alpha(\text{O})=5.5 \times 10^{-7}$ 7; $\alpha(\text{IPF})=3.25 \times 10^{-5}$ 10 $I_\gamma$ : 100 18 from <sup>130</sup> Te( $\alpha, n\gamma$ ). $\delta$ : -0.2 1 or -1.9 2.
1386.153	7/2 <sup>+</sup>	509.8 <sup>&amp;</sup> 4 856.278 7	$\leq 0.7$ 100 3	875.328 529.872	7/2 <sup>+</sup> 5/2 <sup>+</sup>	M1+E2	+3.7 3	0.00235 4	$\alpha(\text{K})=0.00202$ 3; $\alpha(\text{L})=0.000263$ 4; $\alpha(\text{M})=5.33 \times 10^{-5}$ 8; $\alpha(\text{N+..})=1.234 \times 10^{-5}$ 18 $\alpha(\text{N})=1.099 \times 10^{-5}$ 16; $\alpha(\text{O})=1.357 \times 10^{-6}$ 20
1589.94	5/2 <sup>+</sup>	1386.15 10 203.7 <sup>&amp;</sup> 537.73 10 678.65 25 909.67 3	0.70 21 2 17 3 10 3 100 4	0.0 1386.153 1052.297 911.45 680.254	3/2 <sup>+</sup> 7/2 <sup>+</sup> 5/2 <sup>+</sup> 3/2 <sup>+</sup> 3/2 <sup>+</sup>	M1+E2	+0.40 6	0.00257 5	$\alpha(\text{K})=0.00222$ 4; $\alpha(\text{L})=0.000277$ 5; $\alpha(\text{M})=5.59 \times 10^{-5}$ 9; $\alpha(\text{N+..})=1.304 \times 10^{-5}$ 22 $\alpha(\text{N})=1.158 \times 10^{-5}$ 19; $\alpha(\text{O})=1.456 \times 10^{-6}$ 25
		1060.07 6	65 3	529.872	5/2 <sup>+</sup>	M1+E2		0.00165 23	$\alpha(\text{K})=0.00143$ 20; $\alpha(\text{L})=0.000179$ 22; $\alpha(\text{M})=3.6 \times 10^{-5}$ 5;

**Adopted Levels, Gammas (continued)**

γ(<sup>133</sup>Xe) (continued)

<u>E<sub>i</sub>(level)</u>	<u>J<sub>i</sub><sup>π</sup></u>	<u>E<sub>γ</sub><sup>‡</sup></u>	<u>I<sub>γ</sub><sup>‡</sup></u>	<u>E<sub>f</sub></u>	<u>J<sub>f</sub><sup>π</sup></u>	<u>Mult.<sup>@</sup></u>	<u>α<sup>†</sup></u>	<u>Comments</u>
								α(N+..)=8.4×10 <sup>-6</sup> 11 α(N)=7.5×10 <sup>-6</sup> 10; α(O)=9.3×10 <sup>-7</sup> 13 δ: +0.12 10 or +1.3 3.
1589.94	5/2 <sup>+</sup>	1327.2 <sup>&amp;</sup> 1589.94 25	<0.2 1.4 2	262.702 0.0	1/2 <sup>+</sup> 3/2 <sup>+</sup>			
1609.30	9/2 <sup>+</sup>	734.0 <sup>#</sup> 2	100 <sup>#</sup>	875.328	7/2 <sup>+</sup>	M1+E2	0.0038 6	α(K)=0.0033 5; α(L)=0.00043 5; α(M)=8.6×10 <sup>-5</sup> 10; α(N+..)=2.01×10 <sup>-5</sup> 23 α(N)=1.79×10 <sup>-5</sup> 21; α(O)=2.2×10 <sup>-6</sup> 3
1701.4	(7/2)	1093.5 <sup>#</sup> 2	100 <sup>#</sup>	607.87	5/2 <sup>+</sup>	D		
1716.4	15/2 <sup>-</sup>	546.9 <sup>#</sup> 2	100 <sup>#</sup>	1169.52	13/2 <sup>-</sup>	(M1)	0.00893 13	α(K)=0.00772 11; α(L)=0.000972 14; α(M)=0.000197 3; α(N+..)=4.59×10 <sup>-5</sup> 7 α(N)=4.07×10 <sup>-5</sup> 6; α(O)=5.12×10 <sup>-6</sup> 8
1743.75	11/2 <sup>+</sup>	357.6 <sup>#</sup> 2	100 <sup>#</sup>	1386.153	7/2 <sup>+</sup>	(E2)	0.0241	α(K)=0.0200 3; α(L)=0.00321 5; α(M)=0.000661 10; α(N+..)=0.0001502 22 α(N)=0.0001345 19; α(O)=1.571×10 <sup>-5</sup> 23
1789.58	9/2 <sup>+</sup>	180.3 <sup>#</sup> 2	63 <sup>#</sup> 19	1609.30	9/2 <sup>+</sup>	M1	0.1585	α(K)=0.1362 20; α(L)=0.0178 3; α(M)=0.00361 6; α(N+..)=0.000840 12 α(N)=0.000747 11; α(O)=9.34×10 <sup>-5</sup> 14
		403.4 <sup>#</sup> 2	100 <sup>#</sup> 25	1386.153	7/2 <sup>+</sup>	M1+E2	0.0179 12	α(K)=0.0152 13; α(L)=0.00212 5; α(M)=0.000433 12; α(N+..)=9.98×10 <sup>-5</sup> 18 α(N)=8.90×10 <sup>-5</sup> 18; α(O)=1.083×10 <sup>-5</sup> 24
1861.8	9/2 <sup>+</sup>	790.8 <sup>#</sup> 2	100 <sup>#</sup>	1071.04	7/2 <sup>+</sup>	M1+E2	0.0032 5	α(K)=0.0028 5; α(L)=0.00036 5; α(M)=7.2×10 <sup>-5</sup> 9; α(N+..)=1.67×10 <sup>-5</sup> 20 α(N)=1.49×10 <sup>-5</sup> 18; α(O)=1.85×10 <sup>-6</sup> 25
1876.3	19/2 <sup>-</sup>	947.8 <sup>#</sup> 2	100 <sup>#</sup>	928.52	15/2 <sup>-</sup>	E2	0.00182 3	α(K)=0.001570 22; α(L)=0.000203 3; α(M)=4.10×10 <sup>-5</sup> 6; α(N+..)=9.52×10 <sup>-6</sup> 14 α(N)=8.47×10 <sup>-6</sup> 12; α(O)=1.048×10 <sup>-6</sup> 15
2062.0	13/2 <sup>+</sup>	452.7 <sup>#</sup> 2	100 <sup>#</sup>	1609.30	9/2 <sup>+</sup>	E2	0.01190	α(K)=0.01003 14; α(L)=0.001493 21; α(M)=0.000306 5; α(N+..)=7.00×10 <sup>-5</sup> 10 α(N)=6.26×10 <sup>-5</sup> 9; α(O)=7.45×10 <sup>-6</sup> 11
2092.75	(9/2) <sup>-</sup>	706.6 <sup>#</sup> 2	100 <sup>#</sup>	1386.153	7/2 <sup>+</sup>	E1	0.001369 20	α(K)=0.001188 17; α(L)=0.0001451 21; α(M)=2.92×10 <sup>-5</sup> 4; α(N+..)=6.79×10 <sup>-6</sup> α(N)=6.04×10 <sup>-6</sup> 9; α(O)=7.54×10 <sup>-7</sup> 11
2123.7	23/2 <sup>-</sup>	247.4 <sup>#</sup> 2	100 <sup>#</sup>	1876.3	19/2 <sup>-</sup>	E2	0.0785	α(K)=0.0636 9; α(L)=0.01188 17; α(M)=0.00247 4; α(N+..)=0.000555 8 α(N)=0.000499 8; α(O)=5.62×10 <sup>-5</sup> 8

<sup>†</sup> Additional information 1.

<sup>‡</sup> From <sup>133</sup>I β<sup>-</sup> decay (20.83 h), except as noted.

Adopted Levels, Gammas (continued)

$\gamma(^{133}\text{Xe})$  (continued)

# From  $^{130}\text{Te}(\alpha, n\gamma)$ .

@ From  $\gamma(\theta)$  in  $^{133}\text{I} \beta^-$  decay,  $\alpha(\text{K})\text{exp}$  and sub-shell ratios in  $^{133}\text{I}$  IT decay and  $\alpha(\text{K})\text{exp}$ , and  $\gamma(\theta)$  in  $^{130}\text{Te}(\alpha, n\gamma)$ .

& Placement of transition in the level scheme is uncertain.

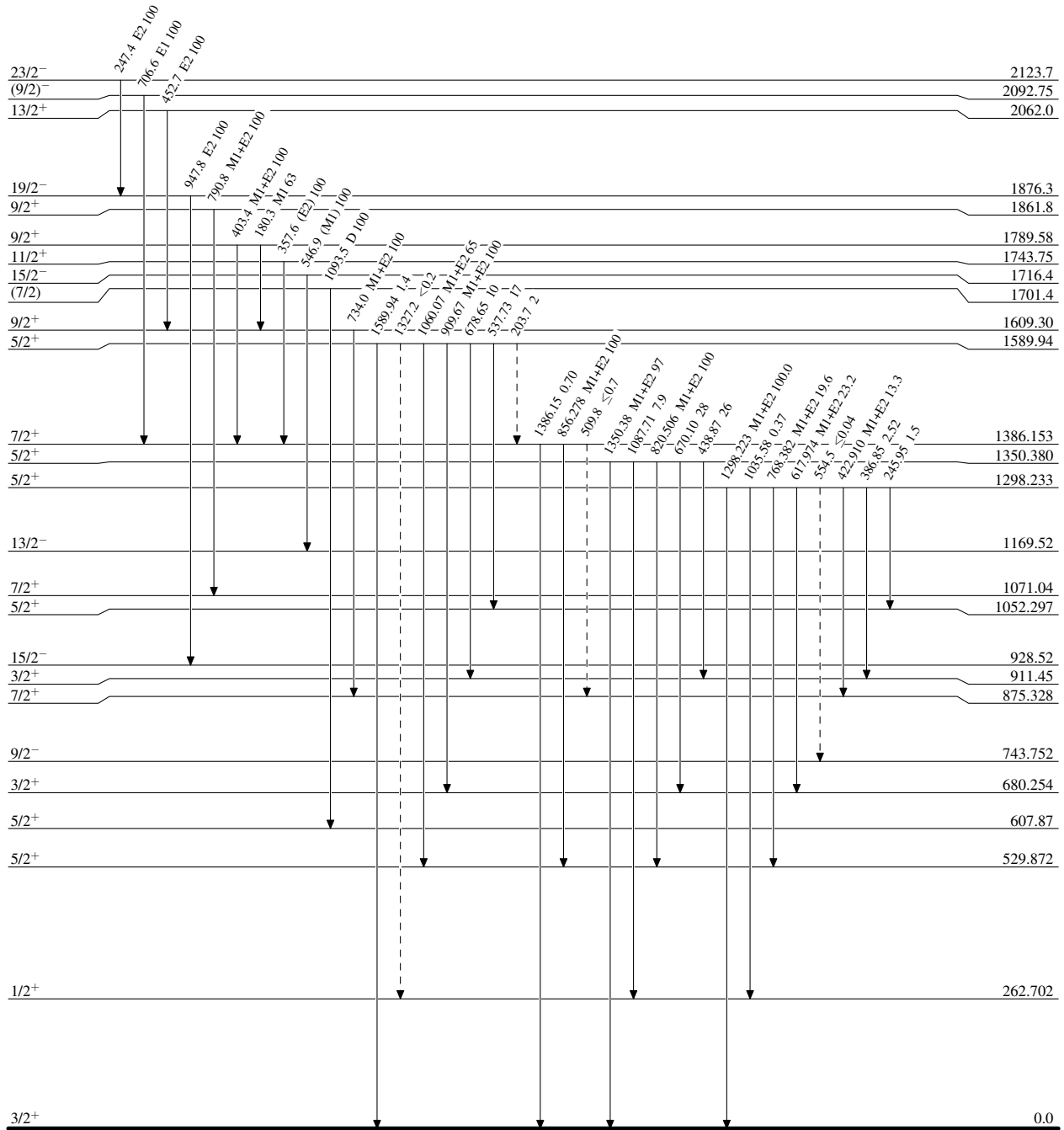
**Adopted Levels, Gammas**

Legend

Level Scheme

Intensities: Relative photon branching from each level

----->  $\gamma$  Decay (Uncertain)



$^{133}_{54}\text{Xe}_{79}$

5.2475 d 5

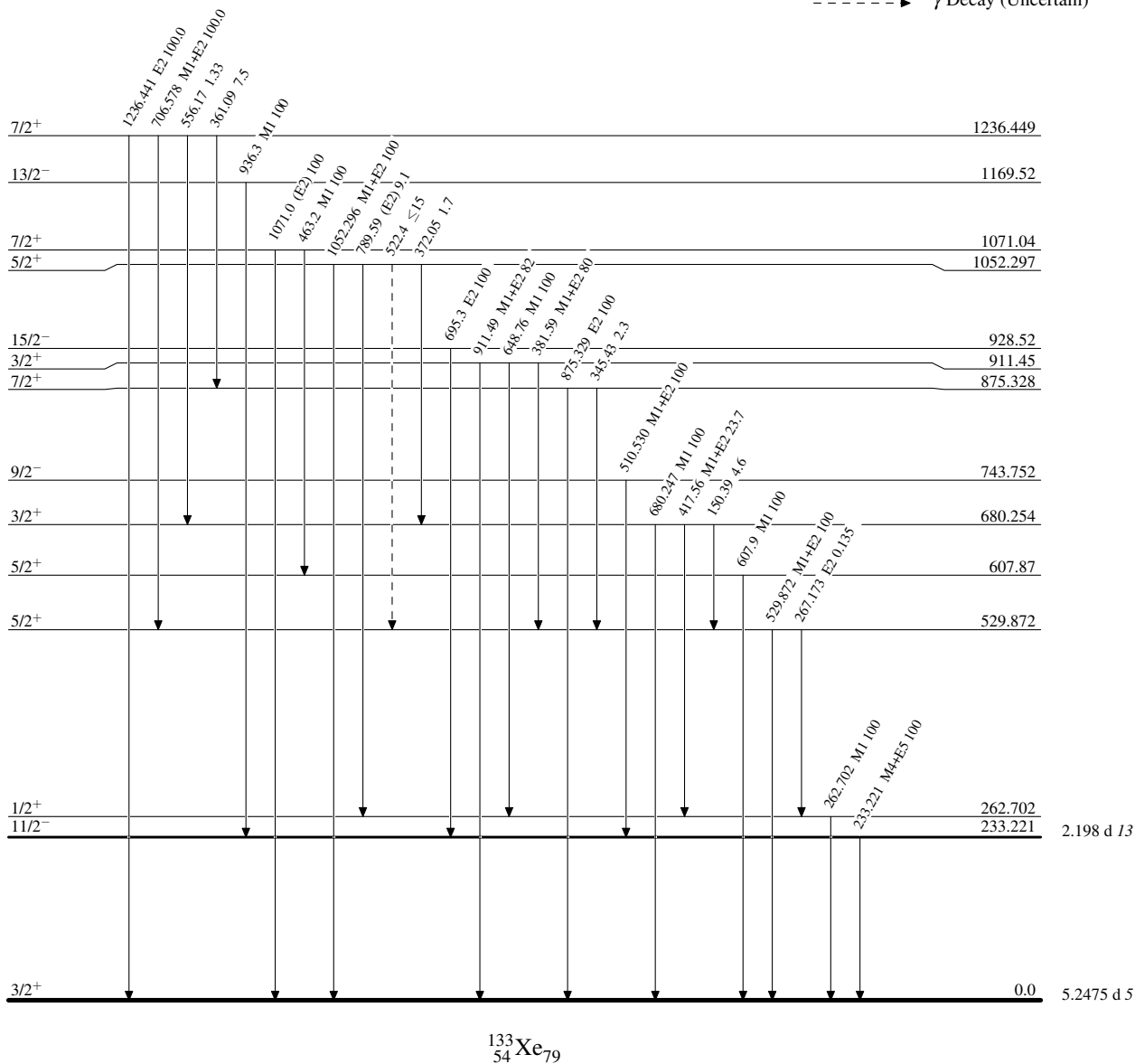


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----▶  $\gamma$  Decay (Uncertain)

**Adopted Levels, Gammas**

**Band(A): Weakly deformed  
band based on the  
 $\nu(\text{h}_{11/2}^+)$   
configuration**

19/2<sup>-</sup>      1876.3

948

15/2<sup>-</sup>      928.52

695

11/2<sup>-</sup>      233.221

$^{133}_{54}\text{Xe}_{79}$