

(HI,xn γ) 2005Nc01,2002SeZX

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

2005Nc01: Produced using deep-inelastic reactions with ^{136}Xe beam on a ^{176}Yb target. Projectile: ^{136}Xe , E=750 MeV. Target: enriched ^{176}Yb , 2-3 mg/cm² thick. Detectors: Afrodite γ ray array (7 clover detectors and 8 four-way segmented LEPS detectors). Measured: E γ , I γ , $\gamma\gamma$ coin. Deduced: level scheme and configurations. Other: [2002MuZW](#).

2002SeZX: Produced using $^{176}\text{Yb}(^9\text{Be},2\alpha)$ reaction. Projectile: ^9Be , E=40, 55 and 70 MeV. Target: ^{176}Yb , 4 mg/cm² thick and enriched up to 96%. Detectors: caesar γ ray array (6 HPGe detectors) and an array of fourteen fast/slow plastic scintillator detectors. Measured: E γ , I γ , $\gamma\gamma$ coin., particle $\gamma\gamma$ coin., $\gamma\gamma(t)$. Deduced: level scheme and configurations.

Others:

1999As05: Produced using deep-inelastic reactions with ^{48}Ca and ^{154}Sm beams on ^{176}Yb target. Projectile: ^{48}Ca , E=250 MeV; ^{154}Sm , E=949 MeV. Target: ^{176}Yb , two stacked foils each 0.5 mg/cm² thick and enriched up to 97.8%. Detectors: Gammasphere spectrometer with 55 Compton-suppressed HPGe detectors and a silicon strip detector. Measured: E γ , I γ , $\gamma\gamma$ coin., particle $\gamma\gamma$ coin., $\gamma\gamma\gamma$ coin., particle $\gamma\gamma\gamma$ coin. Deduced: level scheme and configurations.

1997Le11: Produced using deep-inelastic reactions with ^{48}Ca beam on ^{176}Yb target. Projectile: ^{48}Ca , E=250 MeV. Target: ^{176}Yb , 1 mg/cm² thick and enriched to 97.8%. Detectors: Early implementation of Gammasphere (36 HPGe detectors) and an annular silicon-strip detector. Measured: E γ , I γ , $\gamma\gamma$ coin., particle $\gamma\gamma$ coin. Deduced: level scheme and configurations.

Note, that there is a significant difference between data of [2005Nc01](#), [2002SeZX](#) and these of [1997Le11](#), [1999As05](#). The former are consistent with the results available from the $^{176}\text{Yb}(n,\gamma)$ and $^{176}\text{Yb}(d,p)$ reactions and, therefore, they are adopted in the present evaluation. What is assigned to ^{177}Yb in [1997Le11](#) and [1999As05](#), are excited structures in ^{175}Yb .

 ^{177}Yb Levels

E(level) [†]	J π [‡]	T _{1/2} [#]	Comments
0.0@	9/2 ⁺	1.911 h 3	
104.5& 5	7/2 ⁻	4.48 ns 8	
121.7@ 4	11/2 ⁺		
220.6& 4	9/2 ⁻		
265.4@ 4	13/2 ⁺		
361.6& 7	11/2 ⁻		
430.9@ 5	15/2 ⁺		
527.6& 8	13/2 ⁻		
618.1@ 5	17/2 ⁺		
719.6& 10	15/2 ⁻		
827.5@ 6	19/2 ⁺		
935.6& 11	17/2 ⁻		
1057.5@ 6	21/2 ⁺		
1175.8 ^a 5	15/2 ⁺		configuration: $K^\pi=15/2^+$, $\nu^3(1/2[510],7/2[514],9/2[624])$ proposed in 2005Nc01 .
1310.1@ 7	23/2 ⁺		
1377.8 ^a 10	17/2 ⁺		
1600.8 ^a 10	19/2 ⁺		
1844.8 ^a 11	21/2 ⁺		

[†] From least-squares fit to E γ .

[‡] From [2005Nc01](#).

[#] From Adopted Levels.

@ Band(A): $K^\pi=9/2^+$, $\nu 9/2[624]$ ($i_{13/2}$) band.

& Band(B): $K^\pi=7/2^-$, $\nu 7/2[514]$ band.

^a Band(C): $K^\pi=15/2^+$, $\nu^3(1/2[510],7/2[514],9/2[624])$ band.

(HI,xn γ) 2005Nc01,2002SeZX (continued) $\gamma(^{177}\text{Yb})$

$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π
99.0 5		220.6	9/2 ⁻	121.7	11/2 ⁺	309.2 5	78 15	430.9	15/2 ⁺	121.7	11/2 ⁺
104.5 5		104.5	7/2 ⁻	0.0	9/2 ⁺	352.7 5	100	618.1	17/2 ⁺	265.4	13/2 ⁺
116 1		220.6	9/2 ⁻	104.5	7/2 ⁻	358 1		719.6	15/2 ⁻	361.6	11/2 ⁻
121.5 5		121.7	11/2 ⁺	0.0	9/2 ⁺	396.7 5	100	827.5	19/2 ⁺	430.9	15/2 ⁺
141 1		361.6	11/2 ⁻	220.6	9/2 ⁻	^x 402 [‡]					
143.4 5	100	265.4	13/2 ⁺	121.7	11/2 ⁺	408 1		935.6	17/2 ⁻	527.6	13/2 ⁻
165.6 5	100	430.9	15/2 ⁺	265.4	13/2 ⁺	425 1		1600.8	19/2 ⁺	1175.8	15/2 ⁺
166 1		527.6	13/2 ⁻	361.6	11/2 ⁻	439.3 5	100	1057.5	21/2 ⁺	618.1	17/2 ⁺
187.2 5	83 19	618.1	17/2 ⁺	430.9	15/2 ⁺	467 1		1844.8	21/2 ⁺	1377.8	17/2 ⁺
192 1		719.6	15/2 ⁻	527.6	13/2 ⁻	482.7 5	100	1310.1	23/2 ⁺	827.5	19/2 ⁺
202 1		1377.8	17/2 ⁺	1175.8	15/2 ⁺	^x 493 [‡]					
209.4 5	95 23	827.5	19/2 ⁺	618.1	17/2 ⁺	^x 518 [‡]					
216 1		935.6	17/2 ⁻	719.6	15/2 ⁻	^x 599 [‡]					
220.5 5		220.6	9/2 ⁻	0.0	9/2 ⁺	^x 609 [‡]					
223 1		1600.8	19/2 ⁺	1377.8	17/2 ⁺	^x 665 [‡]					
229.9 5	99 27	1057.5	21/2 ⁺	827.5	19/2 ⁺	910.6 5		1175.8	15/2 ⁺	265.4	13/2 ⁺
244 1		1844.8	21/2 ⁺	1600.8	19/2 ⁺	^x 1001 [‡]					
252.4 5	81 25	1310.1	23/2 ⁺	1057.5	21/2 ⁺	1054.0 5		1175.8	15/2 ⁺	121.7	11/2 ⁺
257 1		361.6	11/2 ⁻	104.5	7/2 ⁻	^x 1104 [‡]					
265.7 5	28 10	265.4	13/2 ⁺	0.0	9/2 ⁺	^x 1117 [‡]					
307 1		527.6	13/2 ⁻	220.6	9/2 ⁻						

[†] From 2005Nc01, unless otherwise stated. ΔE_γ assigned by the evaluator.

[‡] From 2002SeZX.

^x γ ray not placed in level scheme.

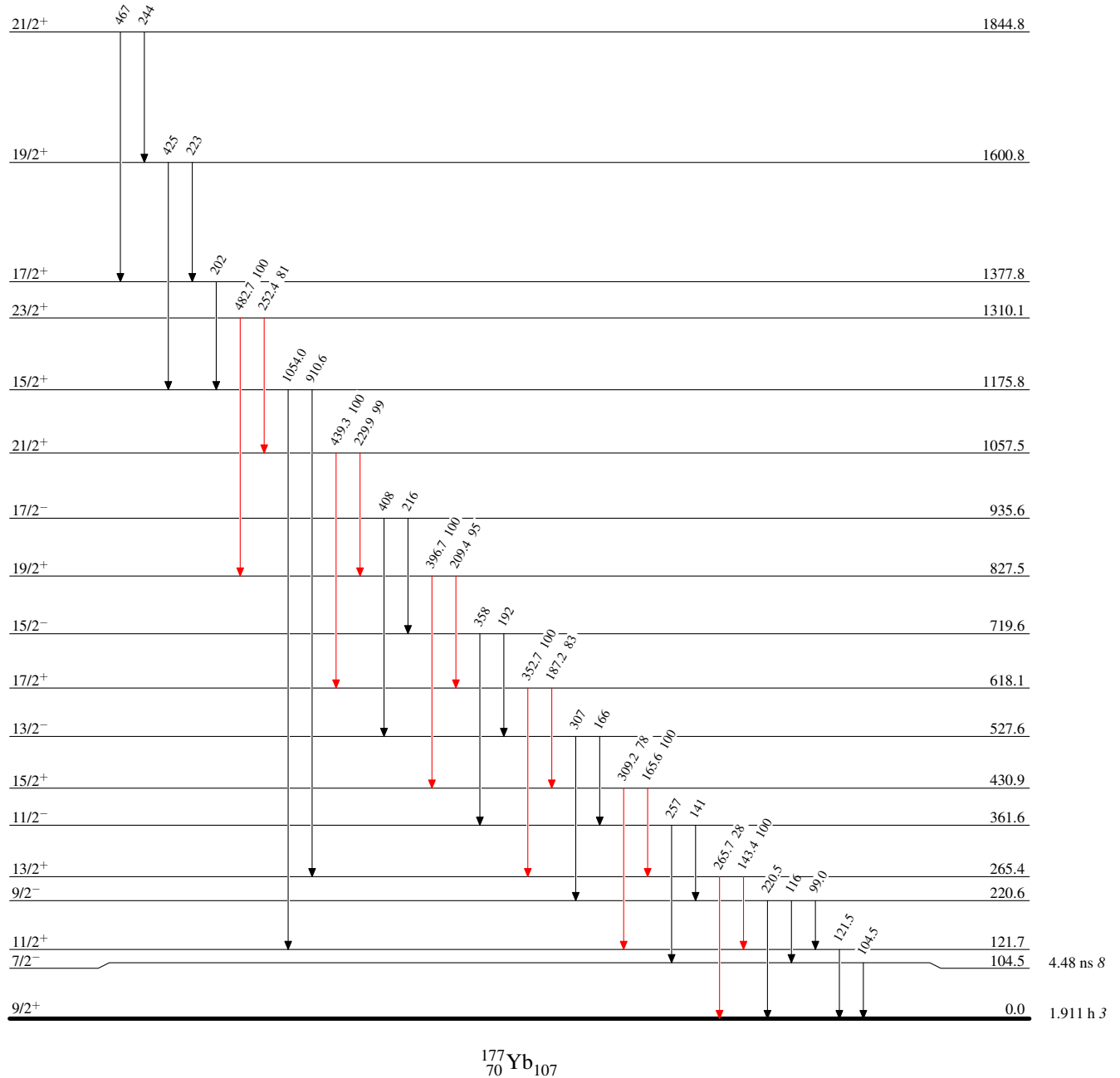
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Level Scheme

Intensities: Type not specified

Legend

-  $I_{\gamma} < 2\% \times I_{\gamma}^{\max}$
 $I_{\gamma} < 10\% \times I_{\gamma}^{\max}$
 $I_{\gamma} > 10\% \times I_{\gamma}^{\max}$



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