

$^{130}\text{Te}(^{14}\text{N}, 5n\gamma)$ **2012BhZZ, 2001Ch91**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

2012BhZZ, 2001Ch91: E=75 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using an array of seven Compton-suppressed HPGe detectors and a multiplicity filter of 14 BGO detectors at IUAC-Pelletron facility. Both references are conference reports with mainly the level schemes provided, and approximate level half-lives in **2012BhZZ**. **2011Mu20** is a conference report from the same experiment which gives $T_{1/2}$ for the 822-keV isomer.

Due to the tentative nature of these results, only those levels are indicated as populated in the Adopted dataset, where levels and deexciting transitions match with other independent studies published in peer-reviewed journals.

Additional information 1.

Data here are from level scheme Figure 2 in **2012BhZZ**.

 ^{139}Pr Levels

E(level) [†]	J ^π #	T _{1/2} &	Comments
0.0	5/2 ⁺		
113.9 5	7/2 ⁺		
822.0 ^a 5	11/2 ⁻	≈36 ns	
852.0 7	11/2 ⁺		
1523.1 6	13/2 ⁺ @		
1722.2 ^a 6	15/2 ⁻		
1866.7 9	(13/2) ⁺		J ^π : (15/2) ⁺ in Adopted Levels.
1941.6 ^a 8	17/2 ⁻		
2187.6 ^a 9	19/2 ⁻	≈9 ns	
2277.6 9	19/2 ⁻		
2367.3 ^a 9	21/2 ⁻		
2761.3 9	19/2 ⁻		
2820.6 ^b 9	21/2 ⁻ @		
3021.0 ^b 10	23/2 ⁻ @		
3265.2 10	23/2 ⁻ @		
3301.0 ^{‡b} 11	25/2 ⁻		
3514.8 ^{‡b} 12	27/2 ⁻		
3626.8 11	25/2 ⁻ @		
3698.0 ^a 10	25/2 ⁺ @	≈12 ns	T _{1/2} : ≈10-15 ns.
3944.5 ^{‡b} 13	29/2 ⁻		
3972.5 11	27/2 ⁻ @		
4051.2 10	25/2 ⁻		
4100.8 ^a 10	27/2 ⁺ @		
4126.8 ^{‡b} 14	31/2 ⁻		
4536.8 ^a 11	29/2 ⁺ @		
4862.8 ^a 13	31/2 ⁺ @		
4926.8 [‡] 11	(29/2)		
5121.4 [‡] 13	(31/2)		
5406.3 ^a 14	33/2 ⁺ @		
5569.0 [‡] 14	(35/2)		
5706.0 [‡] 15	(37/2)		
5715.0 ^{‡c} 14	35/2 ⁺		
5824.8 ^a 14	35/2 ⁻		
6038.3 14	33/2 ⁺		J ^π : (35/2) ⁻ in Adopted Levels.
6129.0 ^{‡c} 15	37/2 ⁺		

Continued on next page (footnotes at end of table)

$^{130}\text{Te}(^{14}\text{N}, 5\text{n}\gamma)$ **2012BhZZ, 2001Ch91** (continued) ^{139}Pr Levels (continued)

E(level) [†]	J ^π #	Comments
6183.0 [‡] 14	(35/2)	
6316.0 14	(35/2 ⁺)	J ^π : (37/2) ⁻ in Adopted Levels.
6387.0 15	(37/2)	
6648.0 ^{‡c} 16	(39/2 ⁺)	
6854.2 ^a 15	39/2 ⁻	
6883.0 ^{‡c} 17	(41/2 ⁺)	
7218.9 ^a 16	43/2 ⁽⁻⁾	
7267.0 ^c 18	(43/2 ⁺)	

[†] From least-squares fit to E_γ data, assuming Δ(E_γ)=0.5 keV for each γ ray.

[‡] Level not given in Adopted Levels. In some cases the deexciting transition shown in this dataset has been relocated in the high-spin investigation by [2012Ye06](#), which has been mainly adopted by the evaluators.

As listed by [2012BhZZ](#) in their Fig. 2.

@ Parity is opposite in Adopted Levels.

& From γγ(t) ([2012BhZZ](#)). Value of 36 ns for the 822-keV level is also given in [2011Mu20](#).

^a Band(A): γ cascade based on 11/2⁻.

^b Band(B): γ cascade based on 21/2⁻.

^c Band(C): γ cascade based on 35/2⁺.

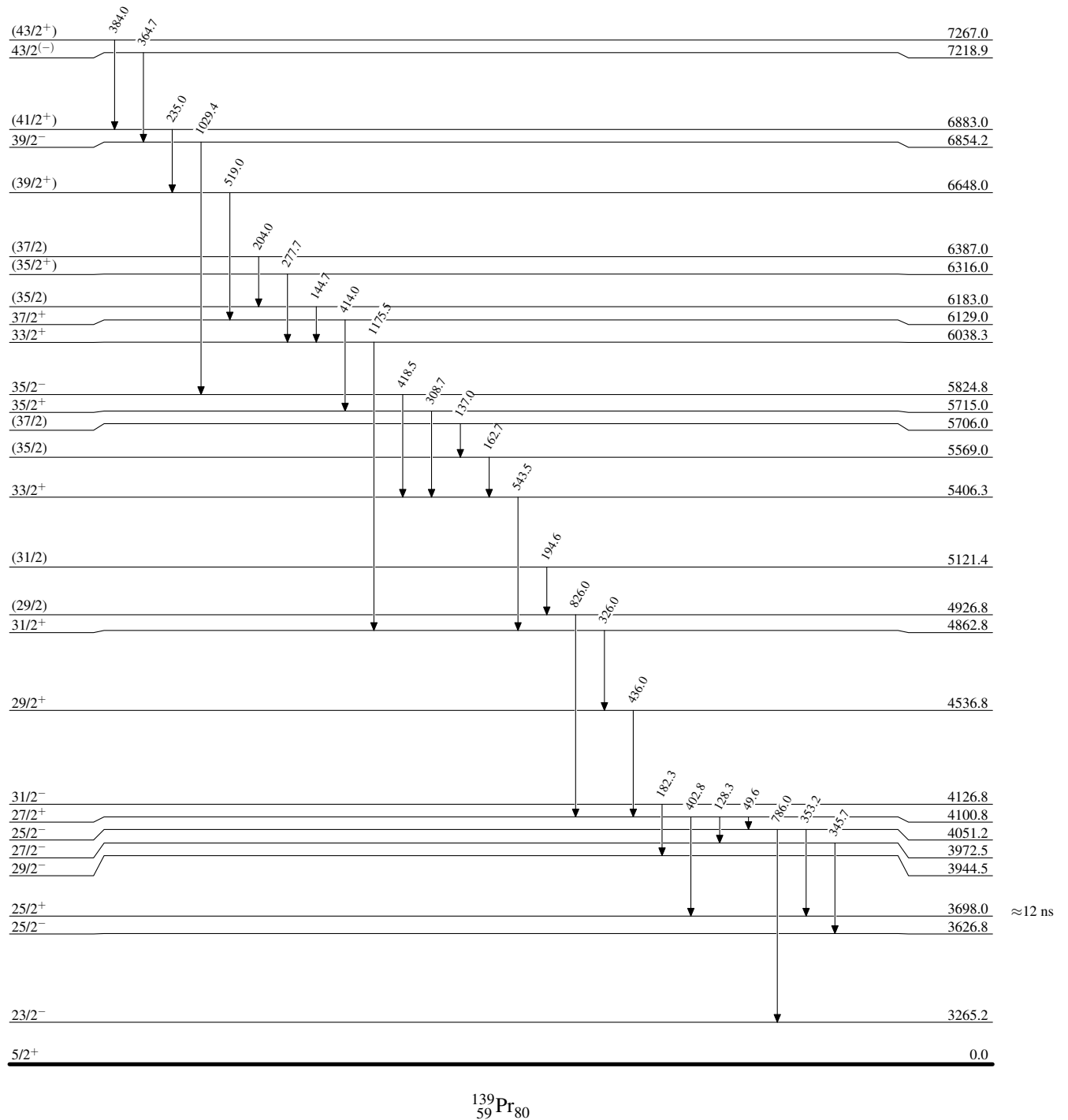
 $\gamma(^{139}\text{Pr})$

E _γ	E _i (level)	J _i ^π	E _f	J _f ^π	E _γ	E _i (level)	J _i ^π	E _f	J _f ^π
(49.6)	4100.8	27/2 ⁺	4051.2	25/2 ⁻	364.7	7218.9	43/2 ⁽⁻⁾	6854.2	39/2 ⁻
59.3	2820.6	21/2 ⁻	2761.3	19/2 ⁻	384.0	7267.0	(43/2 ⁺)	6883.0	(41/2 ⁺)
113.9	113.9	7/2 ⁺	0.0	5/2 ⁺	402.8	4100.8	27/2 ⁺	3698.0	25/2 ⁺
128.3	4100.8	27/2 ⁺	3972.5	27/2 ⁻	414.0	6129.0	37/2 ⁺	5715.0	35/2 ⁺
137.0	5706.0	(37/2)	5569.0	(35/2)	418.5	5824.8	35/2 ⁻	5406.3	33/2 ⁺
144.7	6183.0	(35/2)	6038.3	33/2 ⁺	429.7	3944.5	29/2 ⁻	3514.8	27/2 ⁻
162.7	5569.0	(35/2)	5406.3	33/2 ⁺	436.0	4536.8	29/2 ⁺	4100.8	27/2 ⁺
179.7	2367.3	21/2 ⁻	2187.6	19/2 ⁻	444.6	3265.2	23/2 ⁻	2820.6	21/2 ⁻
182.3	4126.8	31/2 ⁻	3944.5	29/2 ⁻	453.3	2820.6	21/2 ⁻	2367.3	21/2 ⁻
194.6	5121.4	(31/2)	4926.8	(29/2)	519.0	6648.0	(39/2 ⁺)	6129.0	37/2 ⁺
199.1	1722.2	15/2 ⁻	1523.1	13/2 ⁺	543.0	2820.6	21/2 ⁻	2277.6	19/2 ⁻
200.4	3021.0	23/2 ⁻	2820.6	21/2 ⁻	543.5	5406.3	33/2 ⁺	4862.8	31/2 ⁺
204.0	6387.0	(37/2)	6183.0	(35/2)	605.8	3626.8	25/2 ⁻	3021.0	23/2 ⁻
213.8	3514.8	27/2 ⁻	3301.0	25/2 ⁻	701.1	1523.1	13/2 ⁺	822.0	11/2 ⁻
219.4	1941.6	17/2 ⁻	1722.2	15/2 ⁻	708.1	822.0	11/2 ⁻	113.9	7/2 ⁺
235.0	6883.0	(41/2 ⁺)	6648.0	(39/2 ⁺)	738.1	852.0	11/2 ⁺	113.9	7/2 ⁺
244.2	3265.2	23/2 ⁻	3021.0	23/2 ⁻	786.0	4051.2	25/2 ⁻	3265.2	23/2 ⁻
246.0	2187.6	19/2 ⁻	1941.6	17/2 ⁻	819.7	2761.3	19/2 ⁻	1941.6	17/2 ⁻
277.7	6316.0	(35/2 ⁺)	6038.3	33/2 ⁺	822.0	822.0	11/2 ⁻	0.0	5/2 ⁺
280.0	3301.0	25/2 ⁻	3021.0	23/2 ⁻	826.0	4926.8	(29/2)	4100.8	27/2 ⁺
308.7	5715.0	35/2 ⁺	5406.3	33/2 ⁺	900.2	1722.2	15/2 ⁻	822.0	11/2 ⁻
326.0	4862.8	31/2 ⁺	4536.8	29/2 ⁺	1014.7	1866.7	(13/2 ⁺)	852.0	11/2 ⁺
336.0	2277.6	19/2 ⁻	1941.6	17/2 ⁻	1029.4	6854.2	39/2 ⁻	5824.8	35/2 ⁻
345.7	3972.5	27/2 ⁻	3626.8	25/2 ⁻	1175.5	6038.3	33/2 ⁺	4862.8	31/2 ⁺
353.2	4051.2	25/2 ⁻	3698.0	25/2 ⁺	1330.7	3698.0	25/2 ⁺	2367.3	21/2 ⁻

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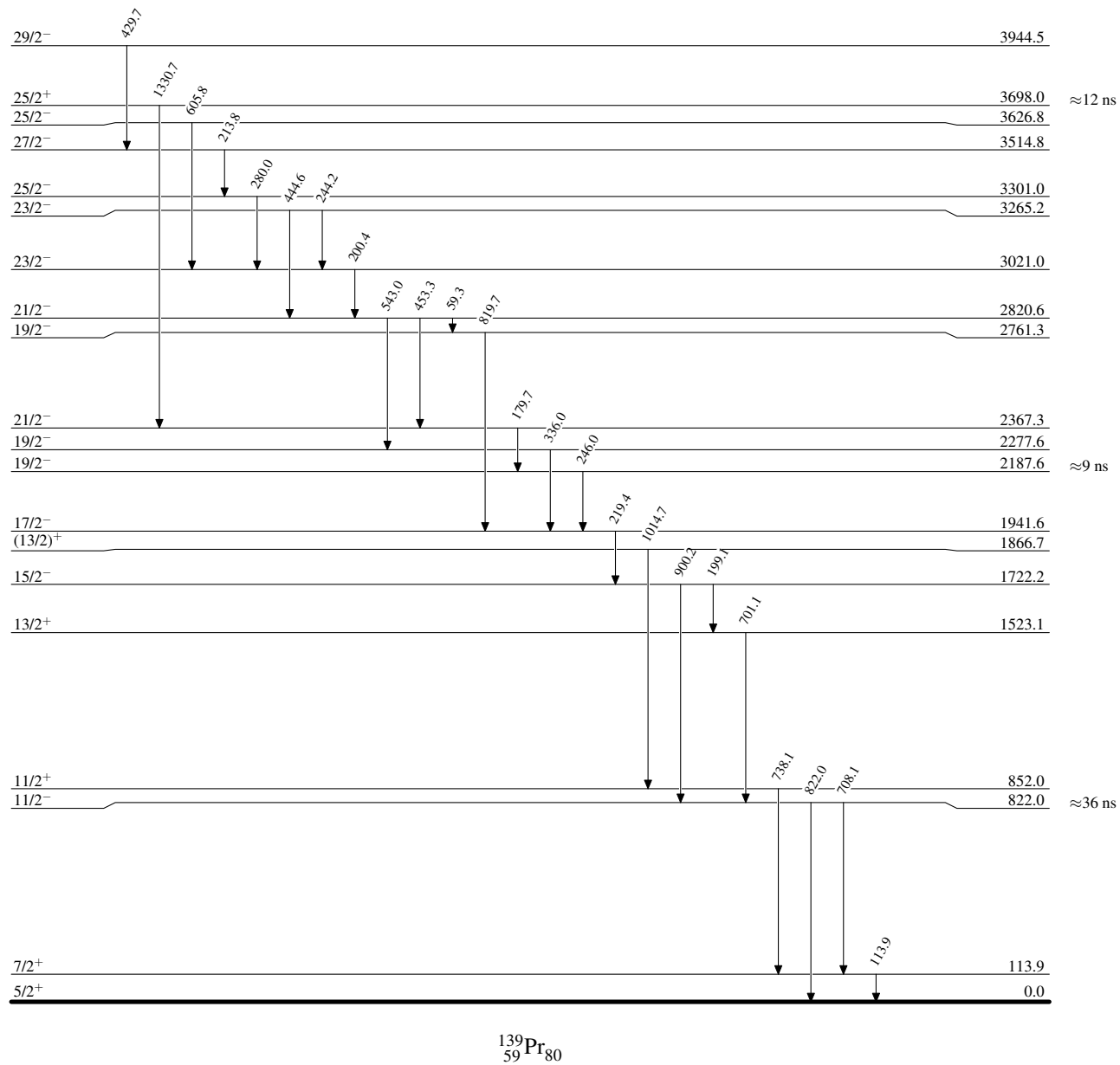
Legend

Level Scheme

-----► γ Decay (Uncertain)

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Level Scheme (continued)

 $^{139}_{59}\text{Pr}_{80}$

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