

¹²⁴Sn(³⁶S,5nγ) 2013Pe19

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 160, 1 (2019)	21-Oct-2019

Data set based on XUNDL file compiled by B. Singh (McMaster).

2013Pe19 (also 2012Ya19 and 2014PeZY): E(³⁶S)=145, 155 MeV. Measured level lifetimes by RDDS (recoil distance Doppler shift) and DSAM (Doppler-shift attenuation) methods using GASP array of 40 Compton-suppressed HPGe detectors at Legnaro facility. Deduced transition probabilities. Comparison with particle plus rotor model calculations.

¹⁵⁵Dy Levels

Band labels in 2013Pe19 are from 1994VI02.

E(level)	J ^π	T _{1/2}	Comments
0.0 [#]	3/2 ⁻		
39.4 [#]	5/2 ⁻		
86.8 [#]	7/2 ⁻		
132.2 ^a	9/2 ⁺		
154.5 ^a	13/2 ⁺		
225.4 [#]	9/2 ⁻	75 [†] ps 17	
234.3 [@]	11/2 ⁻		
381.8 ^a	17/2 ⁺	77.6 [†] ps 28	
436.5 ^{&}	13/2 ⁻	9.3 [†] ps 15	
577.8 [#]	13/2 ⁻		
657.8 [@]	15/2 ⁻	4.85 [†] ps 55	
744.7 ^a	21/2 ⁺	7.90 [†] ps 21	
892.2 ^c	17/2 ⁺	8.8 [†] ps 23	
896.4 ^{&}	17/2 ⁻	2.70 [†] ps 42	
1031.9 [#]	17/2 ⁻	2.70 [†] ps 28	
1150.9 [@]	19/2 ⁻	1.18 [†] ps 28	
1209.0 ^a	25/2 ⁺	2.36 [†] ps 21	
1225.3 ^c	21/2 ⁺	5.48 [†] ps 49	
1533.7 [#]	21/2 ⁻	1.59 [†] ps 28	
1650.2 ^c	25/2 ⁺	2.91 [†] ps 21	
1752.7 ^a	29/2 ⁺	1.07 [†] ps 31	
2169.4 ^c	29/2 ⁺	1.46 [†] ps 21	
2357.7 ^a	33/2 ⁺		
2475.6 ^b	29/2 ⁻		
2990.2 ^b	33/2 ⁻	1.09 [†] ps 19	
3012.0 ^a	37/2 ⁺	396 [‡] fs 53	
3556.3 ^b	37/2 ⁻	0.64 [†] ps 12	
3710.8 ^a	41/2 ⁺	265 [‡] fs 20	
4180.2 ^b	41/2 ⁻	448 [‡] fs 45	T _{1/2} : 0.56 ps 21 (RDDM,2013Pe11).
4453.6 ^a	45/2 ⁺	177 [‡] fs 30	
4865.8 ^b	45/2 ⁻	223 [‡] fs 32	
5238.1 ^a	49/2 ⁺	159 [‡] fs 31	
5610.2 ^b	49/2 ⁻	157 [‡] fs 24	
6405.2 ^b	53/2 ⁻	128 [‡] fs 19	

Continued on next page (footnotes at end of table)

$^{124}\text{Sn}(^{36}\text{S},5n\gamma)$ **2013Pe19** (continued)

^{155}Dy Levels (continued)

E(level)	J^π	$T_{1/2}$
7241.4 ^b	57/2 ⁻	116 [‡] fs 17
8109.7 ^b	61/2 ⁻	110 [‡] fs 41

[†] From RDDS method (2013Pe19).

[‡] From DSAM method (2013Pe19).

Band(A): Band #8: 3/2[521].

@ Band(B): Band #2: 11/2[505], $\alpha=-1/2$.

& Band(b): Band #1: 11/2[505], $\alpha=+1/2$.

^a Band(C): Band #6: i_{13/2}-related.

^b Band(D): Band #7: 3-qp band.

^c Band(E): Band #4.

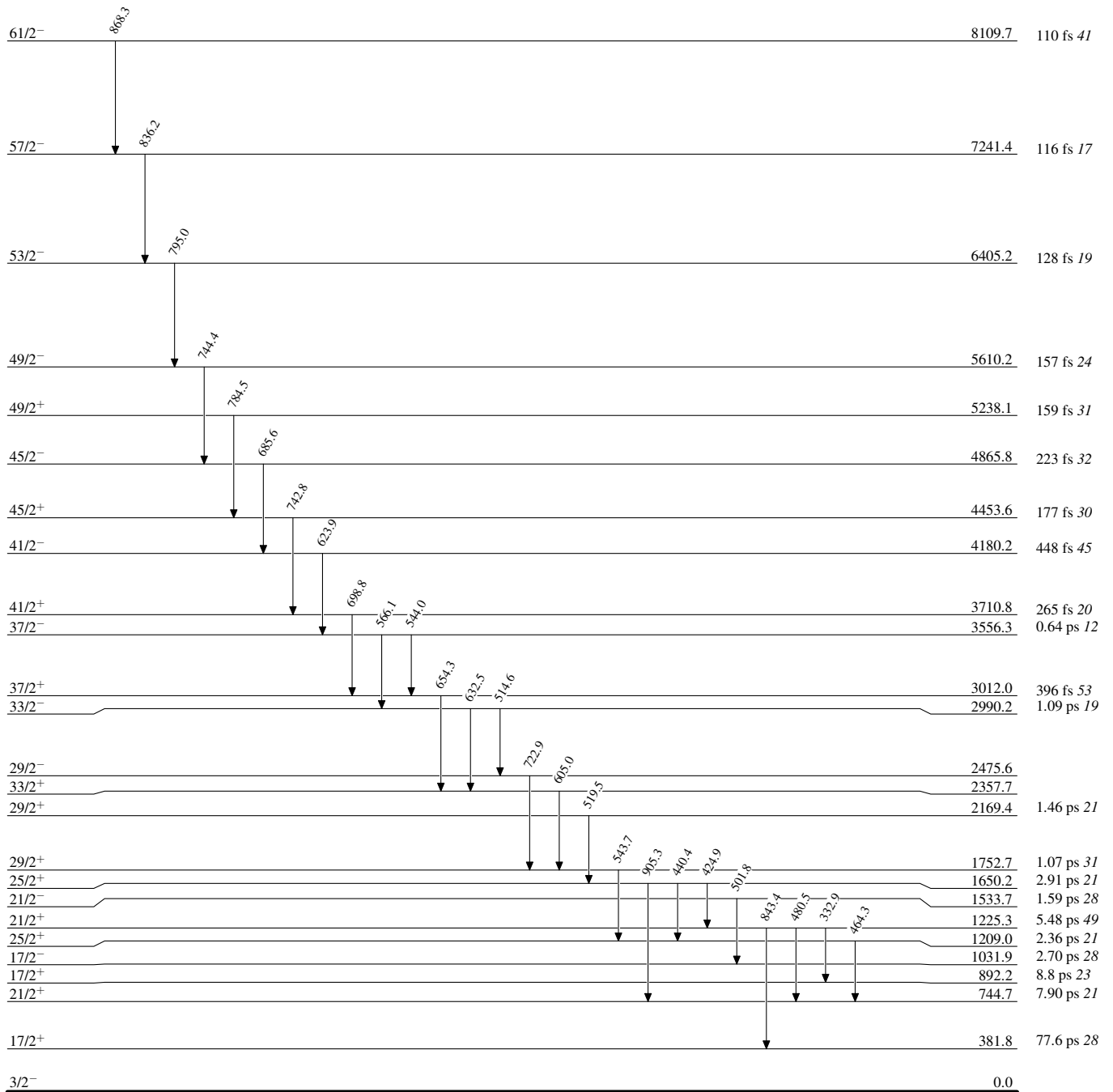
$\gamma(^{155}\text{Dy})$

$E_i(\text{level})$	J_i^π	E_γ [†]	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ [†]	E_f	J_f^π
39.4	5/2 ⁻	39.4	0.0	3/2 ⁻	1225.3	21/2 ⁺	332.9	892.2	17/2 ⁺
86.8	7/2 ⁻	47.4	39.4	5/2 ⁻			480.5	744.7	21/2 ⁺
		86.8	0.0	3/2 ⁻			843.4	381.8	17/2 ⁺
132.2	9/2 ⁺	45.4	86.8	7/2 ⁻	1533.7	21/2 ⁻	501.8	1031.9	17/2 ⁻
154.5	13/2 ⁺	22.2	132.2	9/2 ⁺	1650.2	25/2 ⁺	424.9	1225.3	21/2 ⁺
225.4	9/2 ⁻	138.5	86.8	7/2 ⁻			440.4	1209.0	25/2 ⁺
		185.9	39.4	5/2 ⁻			905.3	744.7	21/2 ⁺
234.3	11/2 ⁻	9.1	225.4	9/2 ⁻	1752.7	29/2 ⁺	543.7	1209.0	25/2 ⁺
		79.7	154.5	13/2 ⁺	2169.4	29/2 ⁺	519.5	1650.2	25/2 ⁺
		102.2	132.2	9/2 ⁺	2357.7	33/2 ⁺	605.0	1752.7	29/2 ⁺
		147.6	86.8	7/2 ⁻	2475.6	29/2 ⁻	722.9	1752.7	29/2 ⁺
381.8	17/2 ⁺	227.3	154.5	13/2 ⁺	2990.2	33/2 ⁻	514.6	2475.6	29/2 ⁻
436.5	13/2 ⁻	202.2	234.3	11/2 ⁻			632.5	2357.7	33/2 ⁺
577.8	13/2 ⁻	352.5	225.4	9/2 ⁻	3012.0	37/2 ⁺	654.3	2357.7	33/2 ⁺
657.8	15/2 ⁻	221.2	436.5	13/2 ⁻	3556.3	37/2 ⁻	544.0	3012.0	37/2 ⁺
		423.5	234.3	11/2 ⁻			566.1	2990.2	33/2 ⁻
744.7	21/2 ⁺	363.0	381.8	17/2 ⁺	3710.8	41/2 ⁺	698.8	3012.0	37/2 ⁺
892.2	17/2 ⁺	510.6	381.8	17/2 ⁺	4180.2	41/2 ⁻	623.9	3556.3	37/2 ⁻
		737.8	154.5	13/2 ⁺	4453.6	45/2 ⁺	742.8	3710.8	41/2 ⁺
896.4	17/2 ⁻	238.7	657.8	15/2 ⁻	4865.8	45/2 ⁻	685.6	4180.2	41/2 ⁻
		459.9	436.5	13/2 ⁻	5238.1	49/2 ⁺	784.5	4453.6	45/2 ⁺
1031.9	17/2 ⁻	454.1	577.8	13/2 ⁻	5610.2	49/2 ⁻	744.4	4865.8	45/2 ⁻
1150.9	19/2 ⁻	254.4	896.4	17/2 ⁻	6405.2	53/2 ⁻	795.0	5610.2	49/2 ⁻
		493.1	657.8	15/2 ⁻	7241.4	57/2 ⁻	836.2	6405.2	53/2 ⁻
1209.0	25/2 ⁺	464.3	744.7	21/2 ⁺	8109.7	61/2 ⁻	868.3	7241.4	57/2 ⁻

[†] From Adopted Gammas dataset. Some E_γ values are rounded values.

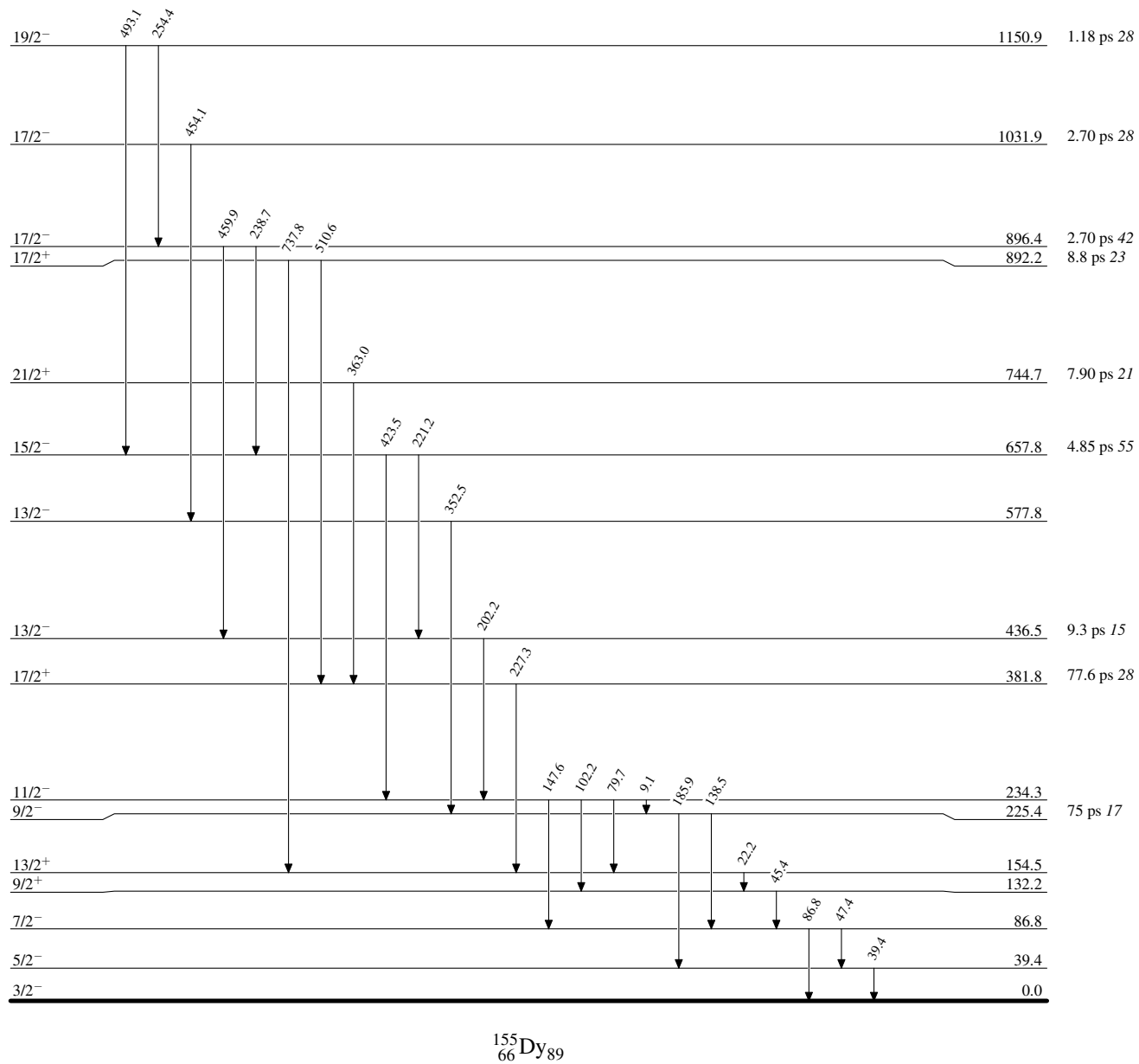
$^{124}\text{Sn}(^{36}\text{S},5n\gamma)$ 2013Pe19

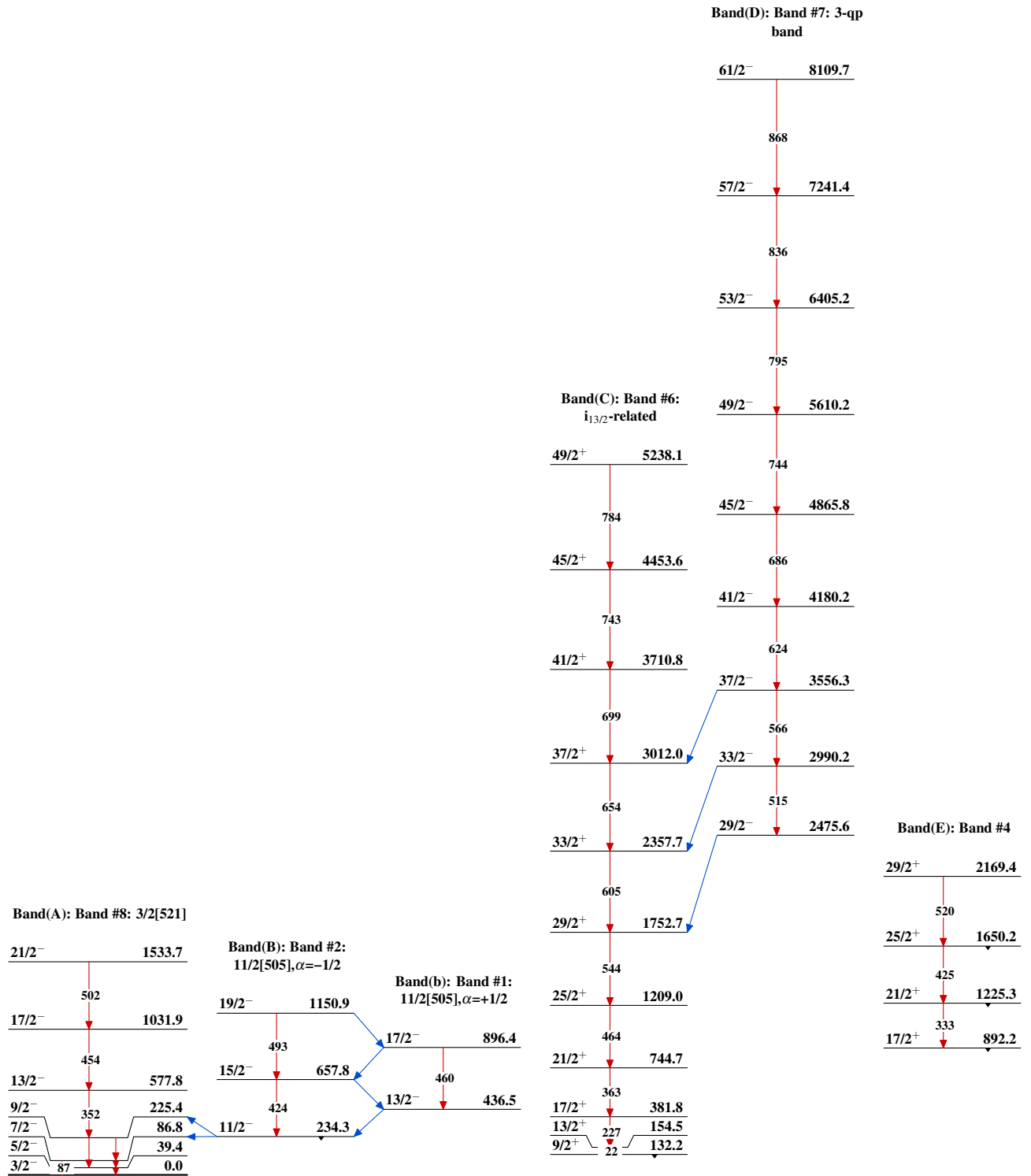
Level Scheme

 $^{155}_{66}\text{Dy}_{89}$

$^{124}\text{Sn}(^{36}\text{S},5n\gamma)$ 2013Pe19

Level Scheme (continued)



$^{124}\text{Sn}(^{36}\text{S},5n\gamma)$ 2013Pe19 $^{155}_{66}\text{Dy}_{89}$