

(HI,xn γ) 1998Ta26,1997Ko51

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 109, 1383 (2008)	1-Mar-2008

1997Ko51: $^{92}\text{Mo}(^{19}\text{F},2\text{p})$, $E=95$ MeV; measured γ , $\gamma\gamma(t)$, $\gamma(\theta)$.

Nordball detector with 20 Ge-BGO detectors and a plastic photoswitch detector array to select the charge particle reaction channel.

1998Ta26: $^{66}\text{Zn}(^{45}\text{Sc},2\text{p}2\text{n}\gamma)$ $E=162$ MeV measured $E\gamma$, $I\gamma$, $\gamma\gamma(\theta)$ (DCO) using an array of 12 Ge detectors.

The level scheme is from **1998Ta26** (15 more transitions than **1997Ko51**) but for the transitions seen by both, their level scheme are in agreement.

 ^{107}In Levels

E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]	E(level) [†]	J π [‡]
0 ^{&}	9/2 ⁺	3315.0 17		4103.0 17		5183.0 [#] 21	29/2 ⁽⁻⁾
1002.0 ^{&} 9	11/2 ⁺	3442.0 [#] 15	21/2 ⁻	4213.0 [@] 22	25/2 ⁻	5211 [@] 3	29/2 ⁽⁻⁾
1415.0 ^{&} 9	13/2 ⁺	3537.0 [@] 16	21/2 ⁻	4651.0 [#] 21	27/2 ⁻	5502 3	
1854.0 ^{&} 13	17/2 ⁺	3646.0 [#] 16	23/2 ⁻	4723.0 [@] 24	27/2 ⁻	5566.0 [#] 22	31/2 ⁽⁻⁾
2004.0 ^{&} 15	19/2 ⁺	3743.0 19		4787.0 21		5655 [@] 3	31/2 ⁽⁻⁾
2795.0 16	21/2 ⁺	3752.0 16		4890.0 24		6070.0 [#] 24	33/2 ⁽⁻⁾
2889.0 16		3853.0 [@] 19	23/2 ⁻	4902.0 22	29/2 ⁽⁻⁾	6989 [@] 3	(33/2)
3283.0 [#] 15	19/2 ⁻	4039.0 [#] 19	25/2 ⁻	5075.0 24			

[†] Level energy from least-squares adjustment.

[‡] As given by **1998Ta26** based on γ multipolarities and previous known $J\pi$.

[#] Band(A): Sequence-1.

[@] Band(B): Sequence-2.

[&] Band(C): Sequence-3.

 $\gamma(^{107}\text{In})$

$E\gamma$ [‡]	$I\gamma$ [†]	E_i (level)	J_i^π	E_f	J_f^π	Mult. [@]	Comments
109.2 5	1.2 7	3646.0	23/2 ⁻	3537.0 21/2 ⁻		M1	R(DCO)=0.53 26.
150.1 8	68.7 1	2004.0	19/2 ⁺	1854.0 17/2 ⁺		M1	R(DCO)=0.58 3.
159.0 2	12.7 1	3442.0	21/2 ⁻	3283.0 19/2 ⁻		M1	R(DCO)=0.55 4.
203.9 1	26.9 1	3646.0	23/2 ⁻	3442.0 21/2 ⁻		M1	R(DCO)=0.61 3.
251.2 4	3.2 14	4902.0	29/2 ⁽⁻⁾	4651.0 27/2 ⁻		D	R(DCO)=0.35 24.
288 [#]	1.5 11	5075.0		4787.0			R(DCO)=0.67 21.
315.7 1	10.1 2	3853.0	23/2 ⁻	3537.0 21/2 ⁻		M1	R(DCO)=0.53 10.
351 [#]	2.0 14	4103.0		3752.0			R(DCO)=0.58 29.
359.7 2	9.4 4	4213.0	25/2 ⁻	3853.0 23/2 ⁻		M1	R(DCO)=0.48 12.
382.6 2	7.4 6	5566.0	31/2 ⁽⁻⁾	5183.0 29/2 ⁽⁻⁾			R(DCO)=0.36 12.
393.0 1	32.8 2	4039.0	25/2 ⁻	3646.0 23/2 ⁻		M1	R(DCO)=0.50 4.
413.4 1	25.3 3	1415.0	13/2 ⁺	1002.0 11/2 ⁺		M1	R(DCO)=0.61 1.
427 [#]	1.3 15	5502		5075.0			
438.5 1	100	1854.0	17/2 ⁺	1415.0 13/2 ⁺		E2	R(DCO)=1.07 2.
444 [#]	2.8 17	5655	31/2 ⁽⁻⁾	5211 29/2 ⁽⁻⁾			R(DCO)=0.35 16.
469 [#]	4.2 8	3752.0		3283.0 19/2 ⁻			
488.1 5	3.3 17	5211	29/2 ⁽⁻⁾	4723.0 27/2 ⁻			R(DCO)=0.58 16.
504.0 6	2.8 17	6070.0	33/2 ⁽⁻⁾	5566.0 31/2 ⁽⁻⁾			R(DCO)=0.40 15.
509.7 3	4.7 11	4723.0	27/2 ⁻	4213.0 25/2 ⁻		M1	R(DCO)=0.51 14.

Continued on next page (footnotes at end of table)

(HI,xn γ) 1998Ta26,1997Ko51 (continued) $\gamma(^{107}\text{In})$ (continued)

E_γ [‡]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [@]	Comments
							E_γ : the placement of the 510 γ and 488 γ is inverted in 1997Ko51.
520 [#]	2.6 19	3315.0		2795.0	21/2 ⁺		
532.2 2	11.5 4	5183.0	29/2 ⁽⁻⁾	4651.0	27/2 ⁻		R(DCO)=0.46 9.
553 [#]	4.7 11	3442.0	21/2 ⁻	2889.0			
611.9 2	21.0 2	4651.0	27/2 ⁻	4039.0	25/2 ⁻	M1	R(DCO)=0.45 4.
647 [#]	1.9 11	3442.0	21/2 ⁻	2795.0	21/2 ⁺		
661 [#]	8.4 4	4103.0		3442.0	21/2 ⁻		
664 1	2.5 10	5566.0	31/2 ⁽⁻⁾	4902.0	29/2 ⁽⁻⁾		R(DCO)=0.43 14.
676.6 5	3.1 10	4890.0		4213.0	25/2 ⁻		E_γ : this transition connects the the 4213 and 3357 keV levels in 1997Ko51. Placed from this level by 1998Ta26 on coincidence arguments.
741.6 9	1.3 15	3537.0	21/2 ⁻	2795.0	21/2 ⁺	E1	R(DCO)=0.63 25.
791.0 1	20.1 1	2795.0	21/2 ⁺	2004.0	19/2 ⁺	M1	R(DCO)=0.70 4.
851.2 3	8.3 3	3646.0	23/2 ⁻	2795.0	21/2 ⁺	E1	R(DCO)=0.45 9.
^x 916 ^{&}	0.3 2						E_γ : only given by 1997Ko51.
948 [#]	3.3 14	3743.0		2795.0	21/2 ⁺		
1001.6 1	23.5 2	1002.0	11/2 ⁺	0	9/2 ⁺	M1	R(DCO)=0.80 4.
1035 [#]	3.8 15	2889.0		1854.0	17/2 ⁺		
1044 [#]	2.9 14	4787.0		3743.0			
1144 [#]	1.6 19	5183.0	29/2 ⁽⁻⁾	4039.0	25/2 ⁻		
1279.4 10	1.3 30	3283.0	19/2 ⁻	2004.0	19/2 ⁺	E1	
1311 [#]	3.6 8	3315.0		2004.0	19/2 ⁺		R(DCO)=0.68 18.
1333.8 7	2.7 17	6989	(33/2)	5655	31/2 ⁽⁻⁾		R(DCO)=0.74 22.
1415.0 1	68.8 1	1415.0	13/2 ⁺	0	9/2 ⁺	E2	R(DCO)=0.96 2.
1429.4 3	13.4 3	3283.0	19/2 ⁻	1854.0	17/2 ⁺	E1	R(DCO)=0.49 7.
1438	20.0 3	3442.0	21/2 ⁻	2004.0	19/2 ⁺	E1	R(DCO)=0.64 6.
1533.1 3	10.2 3	3537.0	21/2 ⁻	2004.0	19/2 ⁺	E1	R(DCO)=0.46 7.
1748 [#]	2.2 17	3752.0		2004.0	19/2 ⁺		

[†] From 1998Ta26.

[‡] We have given values of 1997Ko51 if possible. They have one digit and uncertainties. The values of 1998Ta26 agree but are given as integers.

[#] Only seen by 1998Ta26.

[@] from DCO given by 1998Ta26.

[&] Placement of transition in the level scheme is uncertain.

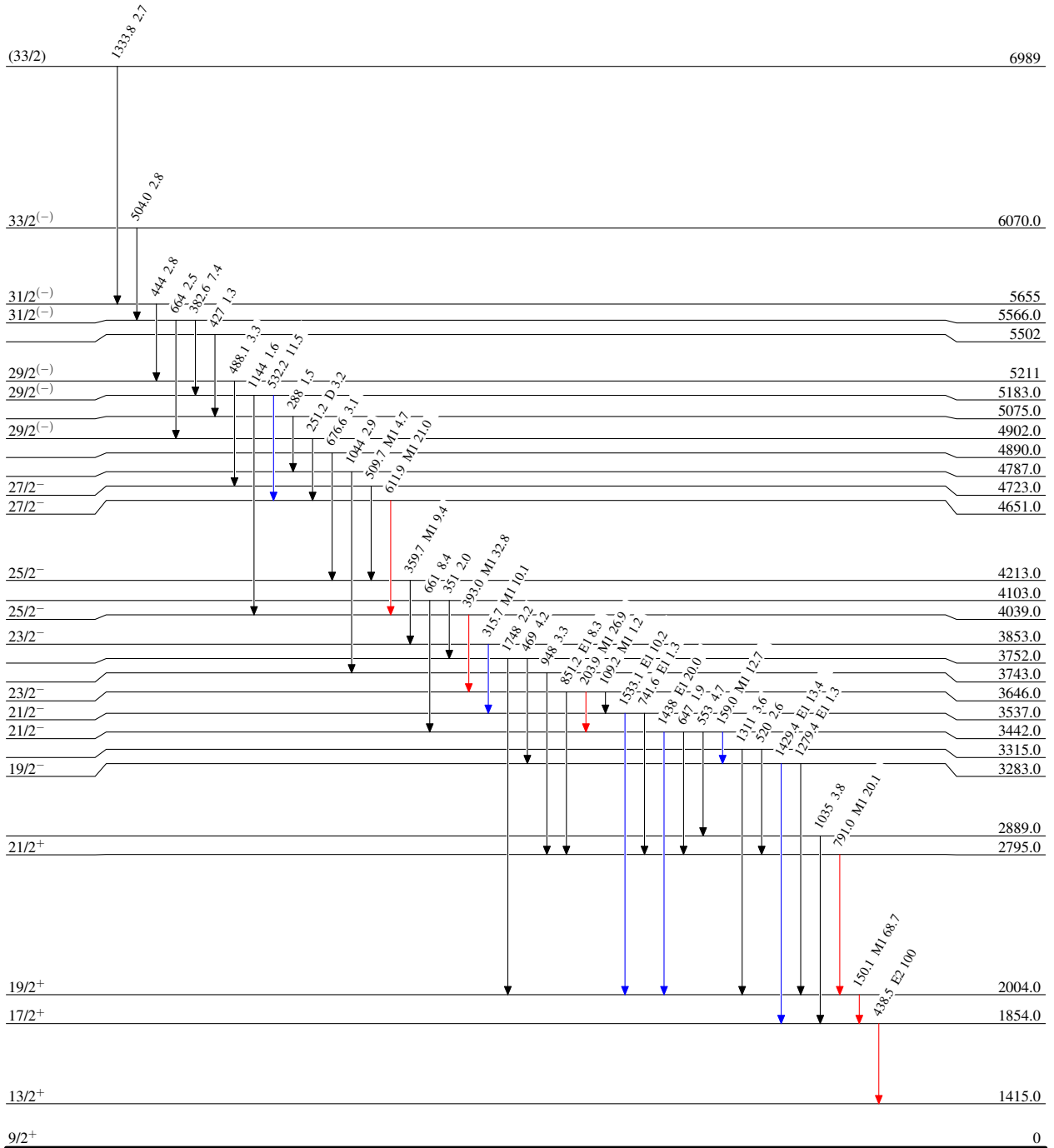
^x γ ray not placed in level scheme.

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Level Scheme
Intensities: Relative I_γ

Legend

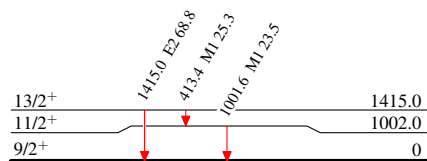
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



(HI,xn γ) 1998Ta26,1997Ko51Level Scheme (continued)Intensities: Relative I_γ

Legend

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

 $^{107}_{49}\text{In}_{58}$

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