^{55}Mn(n,n′γ) 1981Ka46,1979Si04,1989Ge09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 109, 787 (2008)	30-Apr-2007

Additional information 1.
1977Co15: E=1.0-3.6 MeV; Ge(Li) and long counter; measured σ(E; Eγ,θ); statistical compound nucleus theory analysis.
1979Si04: E=2.20, 2.73, and 3.15 MeV; measured σ(Eγ,θ); χ^2 analyses.
1981Ka46: E=1-8 MeV; Ge(Li) and NaI; measured Eγ, Iγ, DSA, populations of excited levels.
1989Ge09, 1991Ge05: E: fast reactor neutrons, Ge(Li), measured DSA.
Others: 1959Na04, 1963La05, 1968Ba03, 1968Br29, 1968Da14, 1968Ma28, 1972VaZT.
All data are from 1981Ka46, except as noted.

^{55}Mn Levels

E(level)	J$^\pi$[†]	T$_{1/2}$	Comments
0.0	5/2$^-$[‡]		
125.92 *7*	7/2$^-$[‡]		
984.23 *7*	9/2[‡]	0.33 ps *+16−11*	
1292.17 *9*	11/2$^-$[‡]	0.64 ps *+49−21*	
1528.38 *8*	3/2$^-$[‡]	90 fs *20*	T$_{1/2}$: other: 76 fs *69* (1989Ge09).
1884.01 *9*	7/2$^-$	9 fs *3*	T$_{1/2}$: from unweighted average values of 8 fs *2* (1981Ka46) and 11 fs *3* (1989Ge09).
2198.21 *11*	7/2$^-$	16 fs *4*	T$_{1/2}$: from unweighted average values of 11 fs *3* (1981Ka46) and 22 fs *3* (1989Ge09).
2215.0 *10*	5/2$^-$,7/2$^-$		
2252.45 *10*	3/2$^-$	25 fs *2*	T$_{1/2}$: other: 25 fs *10* (1989Ge09).
2267.7 *3*	1/2$^-$	0.14 ps *4*	T$_{1/2}$: from unweighted average values of 0.21 ps *3* (1981Ka46) and 0.062 ps *18* (1989Ge09). J$^\pi$: adopted value is 5/2$^-$.
2311.3 *4*	13/2$^-$	60 fs *+9−5*	
2365.71 *11*	5/2$^-$	24 fs *3*	T$_{1/2}$: other: 22 fs *6* (1989Ge09).
2398.38 *12*	9/2$^-$	18 fs *4*	
2426.59 *13*	1/2$^+$		
2563.06 *10*	3/2$^-$	8 fs *5*	T$_{1/2}$: from unweighted average values of 7 ps *2* (1981Ka46) and 10 ps *5* (1989Ge09).
2621.7 *10*			
2694.6 *10*			
2727.45 *10*	7/2$^-$	0.71 ps *14*	T$_{1/2}$: other:>0.49 ps (1989Ge09).
2752.64 *12*	5/2$^-$	33 fs *+7−4*	
2823.61 *16*	5/2$^-$,9/2$^-$	11 fs *2*	
2873.22 *18*	1/2$^-$	0.11 ps *+4−2*	
2953.70 *20*	3/2$^-$	14 fs *2*	
2975.94 *15*	1/2$^-$	90 fs *55*	J$^\pi$: adopted value is 3/2$^-$,5/2$^-$,7/2$^-$. T$_{1/2}$: from 1989Ge09. Other: 34 fs *+130−90* (1981Ka46).
2991.65 *19*	5/2$^+$	20 fs *4*	T$_{1/2}$: other: 18 fs *18* (1989Ge09).
3006.3 *3*	3/2$^-$	21 fs *7*	
3035.70 *22*	11/2$^-$	52 fs *4*	
3038.3 *4*	1/2$^-$		
3080.6 *3*	3/2$^-$		
3126.08 *22*	(13/2$^-$)	17 fs *3*	
3158.45 *12*	3/2$^-$	46 fs *+9−5*	
3195.6 *5*	3/2$^-$		
3260.8 *5*	(5/2$^-$)	35 fs *14*	
3342.01 *22*	13/2$^-$	5 fs	
3350.6 *5*	1/2$^-$		
3373.2 *4*	(11/2$^-$)		
3424.5 *5*			
3659.5 *6*			

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^{55}Mn(n,n′γ) 1981Ka46,1979Si04,1989Ge09 (continued)

^{55}Mn Levels (continued)

E(level)
3917.2 *4*
4383.3 *5*
4415.55 *23*

† Mainly from 1981Ka46. Based on σ(Eγ,θ) and statistical analyses.
‡ Configuration=((π f7/2)^5(ν 2p3/2,2p1/2,f5/2)^2) (1977Co15).

γ(^{55}Mn)

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
125.95		125.92	7/2$^-$	0.0	5/2$^-$		
308.1 *1*	9.3 *10*	1292.17	11/2$^-$	984.23	9/2		
714.2 *5*	0.6 *2*	3080.6	3/2$^-$	2365.71	5/2$^-$		
739.2 *3*	0.8 *1*	2267.7	1/2$^-$	1528.38	3/2$^-$		
770.6 *2*	0.6 *1*	3038.3	1/2$^-$	2267.7	1/2$^-$		
858.2 *1*	100 *3*	984.23	9/2	125.92	7/2$^-$		
868.6 *1*	1.6 *2*	2752.64	5/2$^-$	1884.01	7/2$^-$		
898.2 *1*	2.2 *2*	2426.59	1/2$^+$	1528.38	3/2$^-$		
939.8 *2*	0.9 *2*	2823.61	5/2$^-$,9/2$^-$	1884.01	7/2$^-$		
984.2 *1*	5.3 *3*	984.23	9/2	0.0	5/2$^-$		
1019.1 *4*	4.8 *6*	2311.3	13/2$^-$	1292.17	11/2$^-$		
1166.3 *1*	30.0 *20*	1292.17	11/2$^-$	125.92	7/2$^-$	E2	Mult.: from 1979Si04, based on γ(θ) and χ^2 analyses.
1213.9 *1*	4.6 *3*	2198.21	7/2$^-$	984.23	9/2		
1293.8 *5*	0.4 *2*	3659.5		2365.71	5/2$^-$		
1344.8 *2*	0.7 *1*	2873.22	1/2$^-$	1528.38	3/2$^-$		
1402.4 *1*	1.4 *2*	1528.38	3/2$^-$	125.92	7/2$^-$		
1414.1 *1*	2.2 *2*	2398.38	9/2$^-$	984.23	9/2		
1435.5 *1*	1.4 *2*	2727.45	7/2$^-$	1292.17	11/2$^-$		
1447.3 *2*	0.3 *1*	2975.94	1/2$^-$	1528.38	3/2$^-$		
1528.3 *1*	39.8 *12*	1528.38	3/2$^-$	0.0	5/2$^-$		
1551.5 *3*	0.6 *1*	3917.2		2365.71	5/2$^-$		
1552.5 *3*	0.6 *1*	3080.6	3/2$^-$	1528.38	3/2$^-$		
1630.0 *1*	1.3 *1*	3158.45	3/2$^-$	1528.38	3/2$^-$		
1743.0 *1*	2.2 *5*	2727.45	7/2$^-$	984.23	9/2		
1758.1 *2*	9.2 *7*	1884.01	7/2$^-$	125.92	7/2$^-$		
1884.0 *1*	9.4 *10*	1884.01	7/2$^-$	0.0	5/2$^-$		
2007.2 *4*	0.7 *2*	2991.65	5/2$^+$	984.23	9/2		
2049.8 *2*	0.7 *1*	3342.01	13/2$^-$	1292.17	11/2$^-$		
2049.8 *2*	0.7 *2*	4415.55		2365.71	5/2$^-$		
2072.0 *4*	0.8 *2*	2198.21	7/2$^-$	125.92	7/2$^-$		
2072.0 *3*	0.8 *2*	4383.3		2311.3	13/2$^-$		
2081.0 *3*	1.6 *3*	3373.2	(11/2$^-$)	1292.17	11/2$^-$		
2141.8 *2*	1.7 *2*	3126.08	(13/2$^-$)	984.23	9/2		
2198.5 *2*	8.4 *5*	2198.21	7/2$^-$	0.0	5/2$^-$		
2215		2215.0	5/2$^-$,7/2$^-$	0.0	5/2$^-$		
2239.8 *1*	9.2 *5*	2365.71	5/2$^-$	125.92	7/2$^-$		
2252.4 *1*	7.9 *5*	2252.45	3/2$^-$	0.0	5/2$^-$		
2268.0 *5*	3.6 *10*	2267.7	1/2$^-$	0.0	5/2$^-$		
2273.1 *5*	5.1 *10*	2398.38	9/2$^-$	125.92	7/2$^-$		
2365.3 *2*	4.5 *5*	2365.71	5/2$^-$	0.0	5/2$^-$		
2563.0 *1*	4.4 *5*	2563.06	3/2$^-$	0.0	5/2$^-$		

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^{55}Mn(n,n′γ) 1981Ka46,1979Si04,1989Ge09 (continued)

γ(^{55}Mn) (continued)

E_γ	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Comments
2621.6		2621.7		0.0	5/2$^-$	E_γ: value was calculated by evaluator from the energy difference between the initial level and the final level.
2626.7 *2*	1.8 *2*	2752.64	5/2$^-$	125.92	7/2$^-$	
2694.5		2694.6		0.0	5/2$^-$	E_γ: value was calculated by evaluator.
2697.4 *2*	2.2 *3*	2823.61	5/2$^-$,9/2$^-$	125.92	7/2$^-$	
2727.2 *2*	3.8 *3*	2727.45	7/2$^-$	0.0	5/2$^-$	
2752.8 *5*	0.9 *2*	2752.64	5/2$^-$	0.0	5/2$^-$	
2827.8 *2*	2.2 *2*	2953.70	3/2$^-$	125.92	7/2$^-$	
2865.7 *2*	2.8 *2*	2991.65	5/2$^+$	125.92	7/2$^-$	
2873.2 *3*	0.2 *1*	2873.22	1/2$^-$	0.0	5/2$^-$	
2909.7 *2*	2.8 *3*	3035.70	11/2$^-$	125.92	7/2$^-$	
2953.0 *5*	0.3 *1*	2953.70	3/2$^-$	0.0	5/2$^-$	
2976.1 *2*	1.2 *2*	2975.94	1/2$^-$	0.0	5/2$^-$	
3006.2 *3*	2.2 *2*	3006.3	3/2$^-$	0.0	5/2$^-$	
3134.8 *5*	2.1 *4*	3260.8	(5/2$^-$)	125.92	7/2$^-$	
3159.4 *5*	0.3 *1*	3158.45	3/2$^-$	0.0	5/2$^-$	
3195.5 *5*	1.4 *2*	3195.6	3/2$^-$	0.0	5/2$^-$	
3298.5 *5*	0.2 *1*	3424.5		125.92	7/2$^-$	
3350.5 *5*	0.8 *2*	3350.6	1/2$^-$	0.0	5/2$^-$	

† Intensities normalized to the strongest transition: Iγ(858.2)=100.

^{55}Mn(n,n′γ) 1981Ka46,1979Si04,1989Ge09

Level Scheme

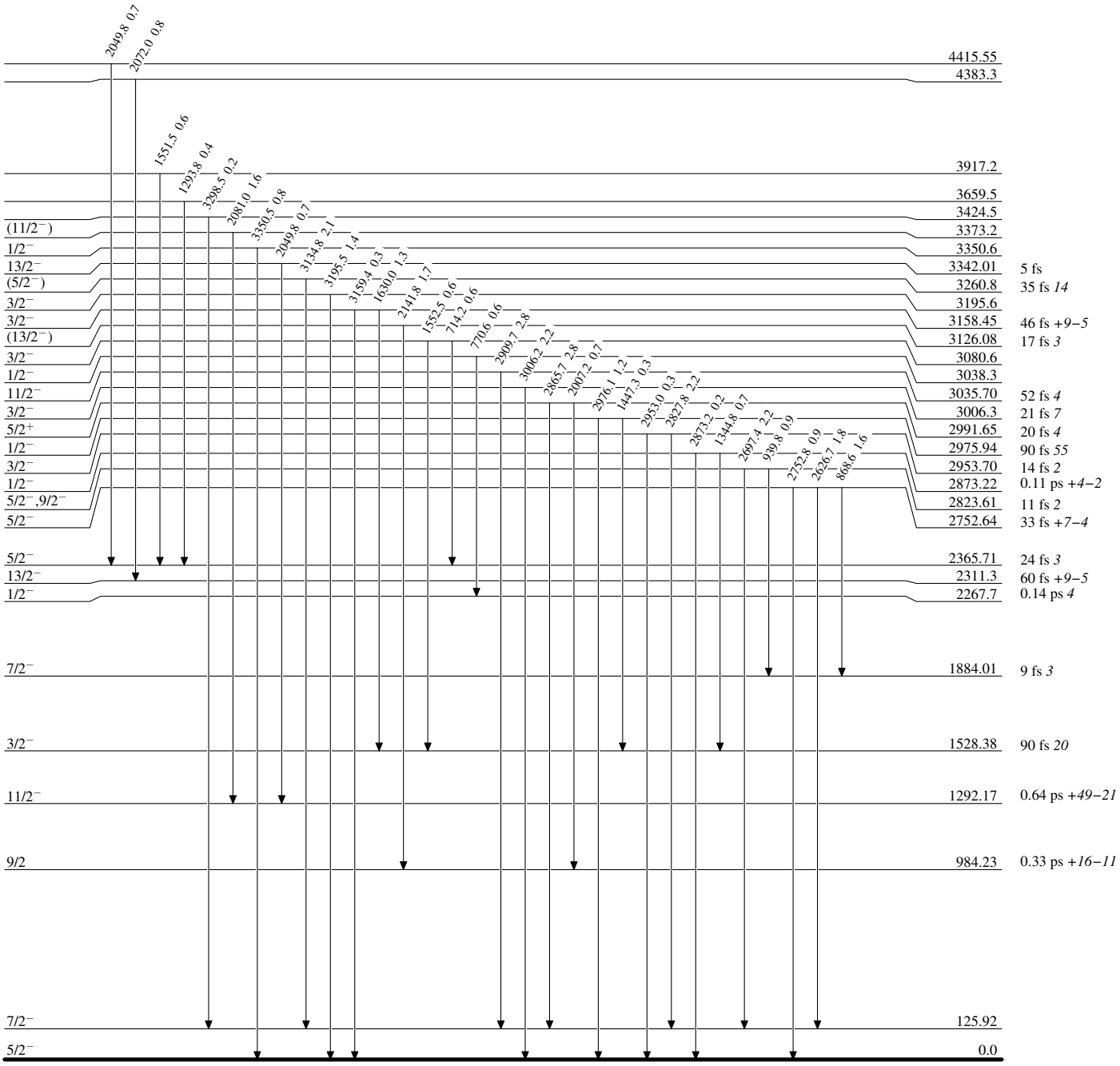
Intensities: Relative I_γ

Legend

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

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

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



$^{55}_{25}Mn_{30}$

^{55}Mn(n,n′γ) 1981Ka46,1979Si04,1989Ge09

Level Scheme (continued)

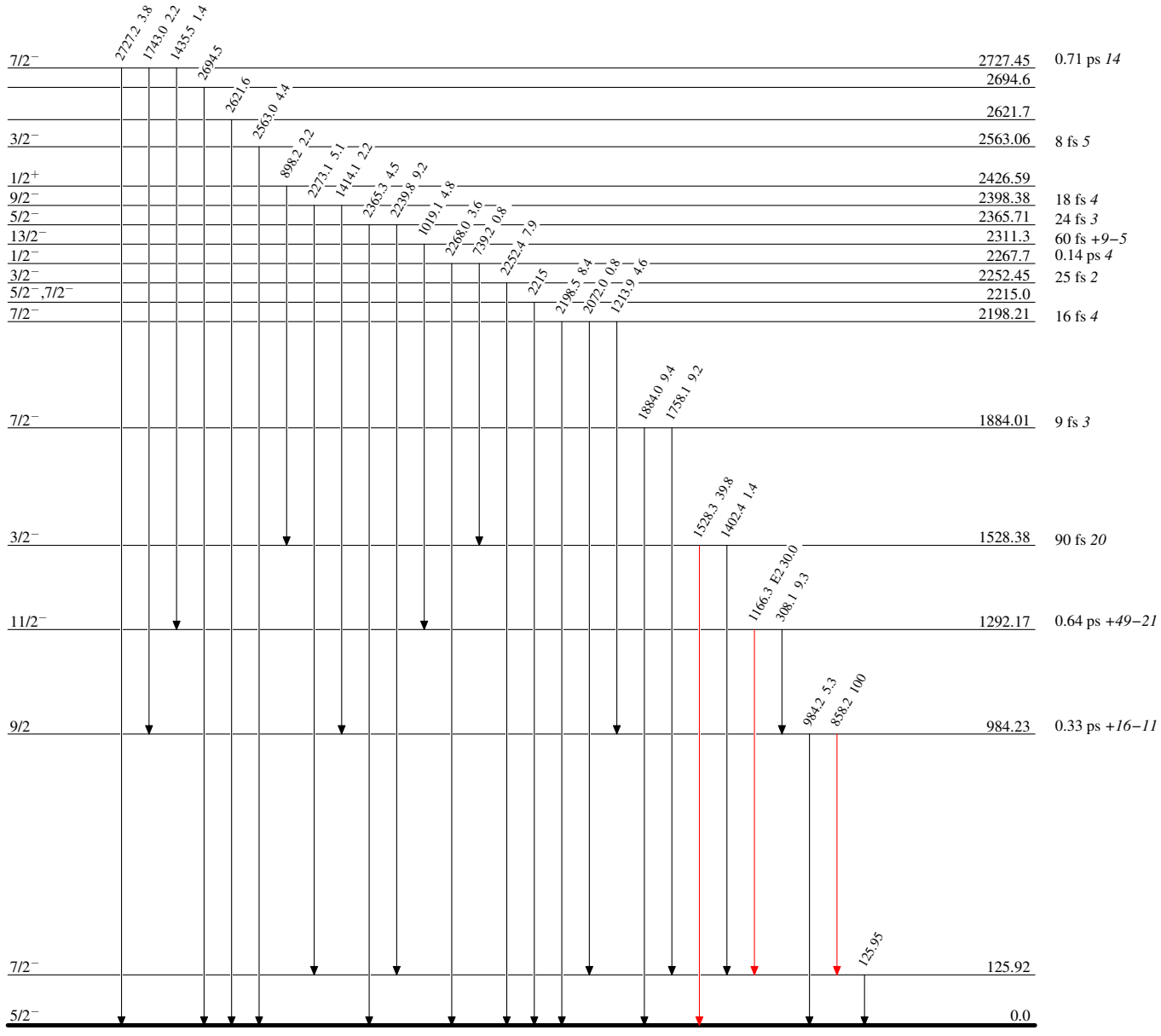
Intensities: Relative I_γ

Legend

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

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

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



$^{55}_{25}Mn_{30}$