

(HI,xnγ) 1977Na12,1974Po14

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

1977Na12: ⁴⁸Ca(¹¹B,4nγ), E=25-50 MeV, Ge(Li); measured σ(E; Eγ) and γγ-coin, RDM and DSA.

1974Po14: ⁵¹V(⁷Li,p2nγ), E=25 MeV, measured γγ-coin, γ(Eγ,θ), RDM, DSA, Ge(Li) detector.

⁵⁵Mn Levels

E(level) [†]	J ^π [‡]	T _{1/2} [@]	Comments
0.0	5/2 ⁻ #		
125.94 7	7/2 ⁻ #	259 ps 8	T _{1/2} : RDM, from weighted average of 265 ps 11 (1974Po14) and 252 ps 11 (1977Na12).
984.29 8	(9/2) ⁻ #	0.69 ps 7	T _{1/2} : RDM. Others: 0.69 ps 11, DSAM (1977Na12); 0.76 ps 21, DSAM (1974Po14).
1292.14 9	(11/2) ⁻ #	1.1 ps 1	T _{1/2} : RDM. Others: 1.1 ps 3, DSAM,<2.8 ps RDM (1974Po14); 1.6 ps 4, DSAM (1977Na12).
2311.57 14 2828.5 20	(13/2) ⁻ #	0.15 ps 3	T _{1/2} : from weighted average of 0.14 3 (1974Po14) and 0.21 ps 7 (1977Na12).
3054.76 17	(15/2) ⁻ #	0.18 ps 4	T _{1/2} : from weighted average of 0.18 ps 4 (1974Po14) and 0.15 ps 6 (1977Na12).
3813.15 22	(15/2) ⁻	0.08 ps 3	
3845.0 3	(-)	<0.2 ps	
4205.59 22	(17/2) ⁻	0.07 ps 3	
5028.2 3	(19/2) ⁻	<0.14 ps	
5418.2 4	(19/2)	<0.14 ps	
5423.3 6	(19/2) ⁻	<0.14 ps	
7035.1 10	(-)	<0.14 ps	
7553.1 5	(21/2) ⁻	<0.14 ps	

[†] From least-squares fit of connected gammas.

[‡] The spin-parity assignments are based on the angular distributions, the feeding intensities, and the lifetime information. The fusion-evaporation reaction, is strongly selective of high-spin states and specifically of yrast level, and high-spin states in the residual nuclei are populated with a high degree of alignment perpendicular to the beam direction. See 1977Na12.

From 1974Po14 based on σ(Eγ,θ) and γ(θ).

@ DSAM, from 1977Na12, except as noted.

γ(⁵⁵Mn)

E _γ [†]	I _γ [#]	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [@]	δ&	Comments
125.94 [‡] 7	100	125.94	7/2 ⁻	0.0	5/2 ⁻	M1(+E2)	+0.07 1	δ: from 1977Na12 and 1974Po14. Additional information 1.
307.86 [‡] 8	25 3	1292.14	(11/2) ⁻	984.29	(9/2) ⁻	M1(+E2)	+0.03 2	δ: from 1977Na12 and 1974Po14. Additional information 3.
392.26 14	3 1	4205.59	(17/2) ⁻	3813.15	(15/2) ⁻	M1		Additional information 11.
743.06 16	40 3	3054.76	(15/2) ⁻	2311.57	(13/2) ⁻	M1(+E2)	+0.07 2	Additional information 7.
758.04 20	100	3813.15	(15/2) ⁻	3054.76	(15/2) ⁻	M1		Additional information 9.
822.51 17	56 3	5028.2	(19/2) ⁻	4205.59	(17/2) ⁻	M1(+E2)	-0.16 4	Additional information 14.
858.31 [‡] 8	96 2	984.29	(9/2) ⁻	125.94	7/2 ⁻	M1+E2	+0.26 2	δ: other: +0.21 3 (1974Po14). Additional information 2.
984.30 [‡] 13	4 2	984.29	(9/2) ⁻	0.0	5/2 ⁻	E2		

Continued on next page (footnotes at end of table)

(HI,xn γ) 1977Na12,1974Po14 (continued) $\gamma(^{55}\text{Mn})$ (continued)

E_γ^\dagger	$I_\gamma^\#$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	$\delta^\&$	Comments
1019.50 ‡ 13	90 4	2311.57	(13/2 ⁻)	1292.14	(11/2 ⁻)	M1(+E2)	+0.11 1	δ : other: +0.22 4 (1974Po14). Additional information 5.
1150.89 42	34 3	4205.59	(17/2 ⁻)	3054.76	(15/2 ⁻)	M1(+E2)	-0.27 3	Additional information 12.
1166.21 ‡ 9	75 3	1292.14	(11/2 ⁻)	125.94	7/2 ⁻	E2		Additional information 4.
1212.60 23	100	5418.2	(19/2)	4205.59	(17/2 ⁻)			Additional information 16.
1326.86 25	10 4	2311.57	(13/2 ⁻)	984.29	(9/2 ⁻)	E2		Additional information 6.
1533.43 26	100	3845.0	(⁻)	2311.57	(13/2 ⁻)	M1		Additional information 10.
1536.3 20	100	2828.5		1292.14	(11/2 ⁻)			E_γ, I_γ : from 1974Po14.
1762.68 22	60 3	3054.76	(15/2 ⁻)	1292.14	(11/2 ⁻)	E2		Additional information 8.
1894.25 28	63 3	4205.59	(17/2 ⁻)	2311.57	(13/2 ⁻)	E2		Additional information 13.
1974.45 65	44 3	5028.2	(19/2 ⁻)	3054.76	(15/2 ⁻)	E2		Additional information 15.
2130.44 50	60 6	7553.1	(21/2 ⁻)	5423.3	(19/2 ⁻)	M1		
2369.96 80	100	5423.3	(19/2 ⁻)	3054.76	(15/2 ⁻)	E2		
2524.46 40	40 6	7553.1	(21/2 ⁻)	5028.2	(19/2 ⁻)	M1		
2829.43 95	100	7035.1	(⁻)	4205.59	(17/2 ⁻)	M1		

† From 1977Na12, except as noted.

‡ From weighted average of values of 1977Na12 and 1974Po14.

$^\#$ Percent branching ratio, from 1977Na12, except as noted.

@ From 1977Na12.

$^\&$ From 1977Na12, except as noted. Phase convention of 1970Kr03 (Krane and Steffen).

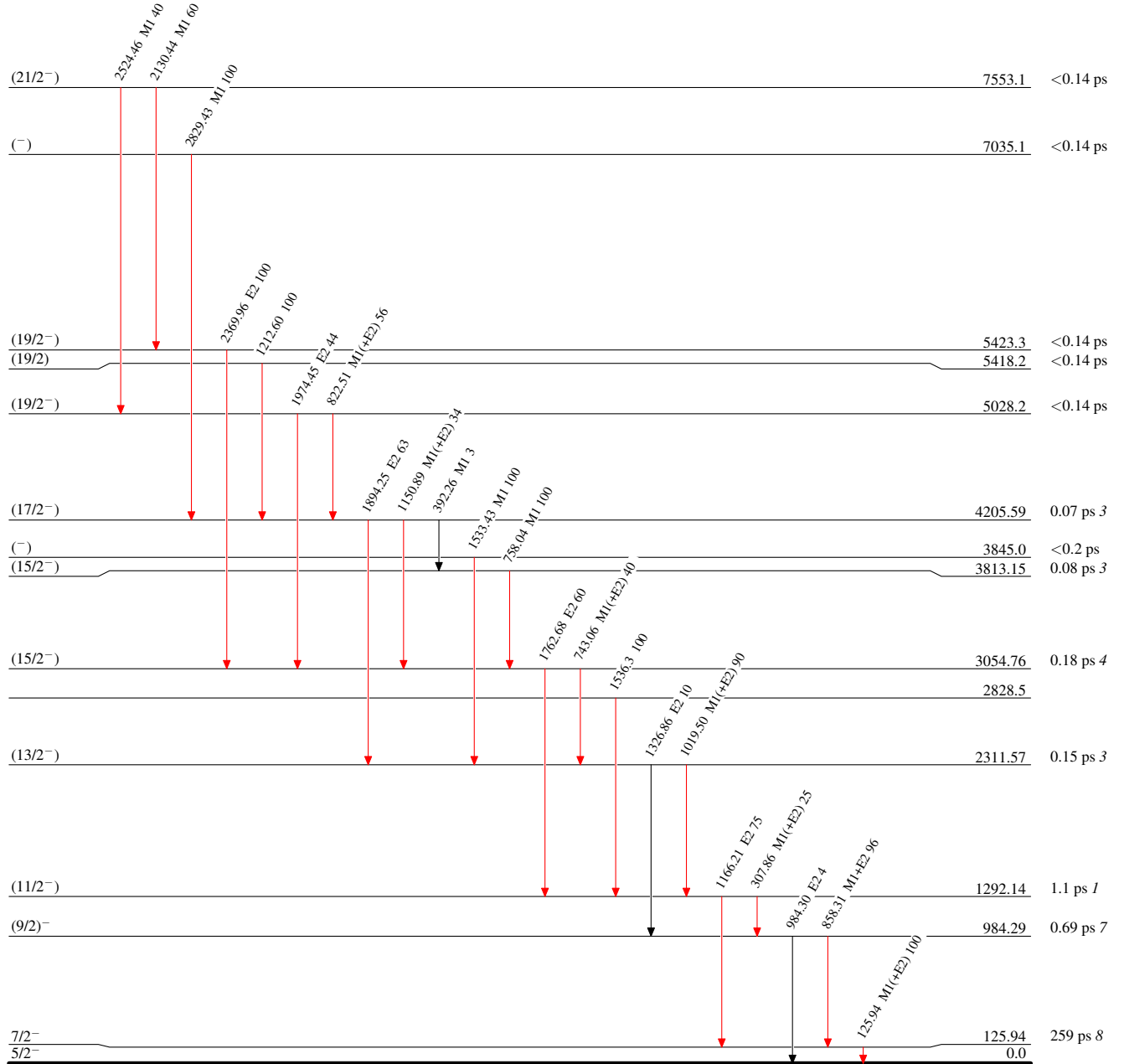
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Level Scheme

Intensities: Relative I γ

Legend

- I γ < 2% \times I γ^{max}
- I γ < 10% \times I γ^{max}
- I γ > 10% \times I γ^{max}



⁵⁵Mn₃₀