

$^{58}\text{Ni}(^{50}\text{Cr},2p2n\gamma)$ **1998Go12**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

$^{58}\text{Ni}(^{50}\text{Cr},2p2n\gamma)$ E=200 and 205 MeV **1998Go12**.

Measured: γ , $\gamma\gamma$, $n\gamma$. Gasp Spectrometer, $T_{1/2} < 1$ ps with DSA method using beam energy of 200 MeV, $T_{1/2} = 1$ ps to 0.5 ns by RDM with the Cologne plunger using beam energy of 205 MeV.

DCO ratio: $(I_{\gamma}(34^{\circ}) + I_{\gamma}(146^{\circ})) / I_{\gamma}(90^{\circ})$. The ratios=0.7-0.9 for stretched D, The ratios = 1.5-1.9 for stretched Q. The latter are estimated E2, Ratios \approx 2.0 for stretched octupole.

 ^{104}Sn Levels

E(level)	$J^{\pi\dagger}$	$T_{1/2}$	E(level)	$J^{\pi\dagger}$	$T_{1/2}$	E(level)	$J^{\pi\dagger}$
0.0	0^{+}		5838.9 4	(11^{-})		7125.1 6	(13^{-})
1260.21 20	2^{+}		6033.4 4	(11^{-})		7997.6 5	
1943.02 23	4^{+}		6084.5 5	(11^{-})	0.7 ps 3	8443?	
2257.22 25	6^{+}	1.53 ns 21	6432.9 4	(13^{-})	44 ps 7	8990?	
3440.3 3	8^{+}	<14 ps	6469.5 4	(13^{-})	36 ps 8	9587?	
3980.5 3	10^{+}	104 ps 14	6581.0 6	(12^{-})	≤ 1 ps	9998?	
4721.7? 5	(9^{-})	<5.5 ps	6854.0 4	(14^{-})			

\dagger As given by **1998Go12** from γ multiplicities derived of DCO ratios.

 $\gamma(^{104}\text{Sn})$

E_{γ}	I_{γ}	$E_i(\text{level})$	J_i^{π}	E_f	J_f^{π}	Mult. \dagger	Comments
314.2 1	94 2	2257.22	6^{+}	1943.02	4^{+}	E2	B(E2)(W.u.)=4.2 6 DCO=1.89 8.
384.6 2	7 1	6854.0	(14^{-})	6469.5	(13^{-})	D	DCO=0.8 3.
411.7 3	8 2	9998?		9587?			
421.1 2	28 2	6854.0	(14^{-})	6432.9	(13^{-})	D	DCO=0.8 2.
436.1 2	13 2	6469.5	(13^{-})	6033.4	(11^{-})	Q	DCO=1.5 4.
445.9 2	16 2	8443?		7997.6			
496.5 2	19 2	6581.0	(12^{-})	6084.5	(11^{-})	M1	B(M1)(W.u.)>0.18 DCO=0.8 2.
540.2 1	81 3	3980.5	10^{+}	3440.3	8^{+}	E2	B(E2)(W.u.)=4.1 6 DCO=1.81 9.
544.1 3	8 1	7125.1	(13^{-})	6581.0	(12^{-})	D	DCO=0.9 2.
547.1 3	16 2	8990?		8443?			
594.0 1	33 3	6432.9	(13^{-})	5838.9	(11^{-})	Q	DCO=1.4 2.
597.2 3	14 2	9587?		8990?			
682.8 1	93 2	1943.02	4^{+}	1260.21	2^{+}	E2	DCO=1.68 8.
1117.0 5	11 2	5838.9	(11^{-})	4721.7? (9^{-})			
1143.5 4	13 2	7997.6		6854.0 (14^{-})			
1183.1 1	97 2	3440.3	8^{+}	2257.22	6^{+}	E2	B(E2)(W.u.)>0.60 DCO=1.81 9.
1260.2 2	100 2	1260.21	2^{+}	0.0	0^{+}	E2	DCO=1.60 9.
1281.1 5	7 2	4721.7?	(9^{-})	3440.3	8^{+}		
1564.8 5	4 2	7997.6		6432.9	(13^{-})		
1858.5 3	26 3	5838.9	(11^{-})	3980.5	10^{+}	E1	DCO=0.9 2.
2053.2 4	11 2	6033.4	(11^{-})	3980.5	10^{+}	E1	DCO=0.8 3.
2104.0 4	19 2	6084.5	(11^{-})	3980.5	10^{+}	E1	B(E1)(W.u.)=4.7 \times 10 $^{-5}$ 21 DCO=0.9 2.
2451.8 5	6 2	6432.9	(13^{-})	3980.5	10^{+}	E3	B(E3)(W.u.)=12 5 DCO=2.0 3.

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$^{58}\text{Ni}(^{50}\text{Cr},2\text{p}2\text{n}\gamma)$ 1998Go12 (continued) $\gamma(^{104}\text{Sn})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.†	Comments
2488.7 5	6 1	6469.5	(13 ⁻)	3980.5	10 ⁺	E3	B(E3)(W.u.)=28 9 DCO=2.1 3.

† From DCO ratios and Weisskopf estimates derived from $T_{1/2}$.

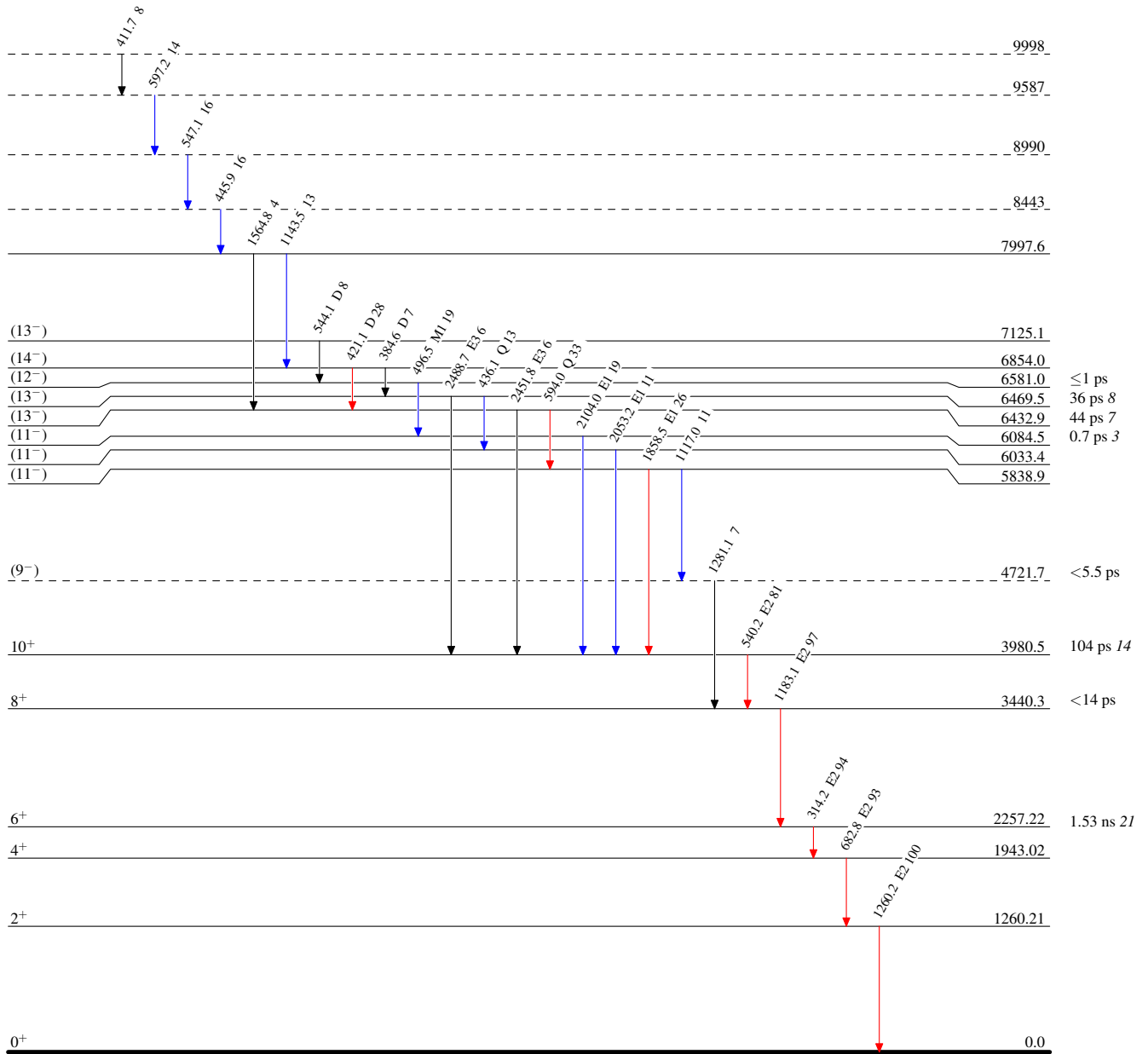
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Level Scheme

Intensities: Relative I_γ

Legend

- \blacktriangleright $I_\gamma < 2\% \times I_\gamma^{max}$
- $\color{blue}\blacktriangleright$ $I_\gamma < 10\% \times I_\gamma^{max}$
- $\color{red}\blacktriangleright$ $I_\gamma > 10\% \times I_\gamma^{max}$



$^{104}_{50}\text{Sn}_{54}$