^{53}Cr(p,γ) res 1975We10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 121, 1 (2014)	20-Jun-2014

Additional information 1.

1975We10: ^{53}Cr ions were shot into a Ta backing, thicknesses≈0.6-3.0 keV E(p)=1180-2100 keV. Observed 269 resonances corresponding to states from 8720 to 9621 keV. Calibrated proton energies using the ^{27}Al(p,γ) known resonances, resolution 500 eV. Ge(Li).

1981Ga38: E(p)=880-2400 keV, 40 keV steps, Ge(Li), measured $\sigma(\theta)$. Statistical global optical-model analyses, deduced IAS.

1969Se01: E(p)=1500 keV. NaI, Ge(Li).

1966Jo08: measured the decay of the 1209-keV resonance. NaI(Tl), Ge(Li).

Q=7559.6 *10*, see 1975We10.

All data from 1975We10, except as noted.

39 resonances states and 630 γ-rays from the states were unplaced in the dataset.

^{54}Mn Levels

E(level)	E(level)	E(level)	E(level)
0.0	1784.7 *4*	2877.2 *5*	3606.0 *10*
54.6 *4*	1852.8 *4*	2903 *2*	3673.1 *10*
156.3 *1*	1921.8 *4*	3012 *2*	3755 *2*
368.2 *4*	2109.0 *4*	3116 *2*	3811.6 *10*
407.8 *1*	2132.9 *4*	3191 *2*	3857 *2*
838.9 *2*	2266.5 *4*	3213 *2*	3937 *2*
1009.9 *4*	2291.6 *4*	3221 *2*	3969 *2*
1375.1 *2*	2355.2 *6*	3307 *2*	4056 *2*
1390.5 *4*	2497.9 *4*	3334.3 *10*	4085 *2*
1454.2 *4*	2556.4 *6*	3358.7 *10*	4158 *2*
1508.3 *2*	2558.5 *6*	3384.1 *10*	4176 *2*
1544.0 *3*	2673 *2*	3535.6 *10*	4209.4 *10*
1634.2 *4*	2711.7 *6*	3546.7 *10*	4262.2 *6*
1648.8 *10*	2773.7 *10*	3585.3 *10*	4377.8 *10*

γ(^{54}Mn)

E_γ [#]	I_γ [†]	E_i(level)	E_f	E_γ [#]	I_γ [†]	E_i(level)	E_f
54.6 *4*	100	54.6	0.0	1378 *2*	40 [‡] *10*	3937	2558.5
156.3 *1*	100	156.3	0.0	1399.6 *6*	100	1454.2	54.6
211.9 *4*	100	368.2	156.3	1453.7 *5*	37 *2*	1508.3	54.6
251.5 *1*	60 *3*	407.8	156.3	1508.3 *2*	63 *2*	1508.3	0.0
353.2 *4*	9 *3*	407.8	54.6	1544.0 *3*	100	1544.0	0.0
407.8 *1*	31 *3*	407.8	0.0	1579.6 *6*	65 *5*	1634.2	54.6
470.7 *4*	51 *2*	838.9	368.2	1594.2 *11*	100	1648.8	54.6
682.6 *3*	11 *2*	838.9	156.3	1636.9 *20*	60 *10*	3012	1375.1
718.5 *6*	59 *3*	2109.0	1390.5	1682.7 *20*	30 [‡] *10*	3191	1508.3
838.9 *2*	38 *2*	838.9	0.0	1696.5 *4*	28 *3*	1852.8	156.3
853.6 *4*	43 *2*	1009.9	156.3	1740.9 *20*	15 [‡] *10*	3116	1375.1
955.3 *6*	57 *2*	1009.9	54.6	1762.0 *11*	(30) [‡]	3546.7	1784.7
967.3 *2*	19 *5*	1375.1	407.8	1784.7 *4*	60 *10*	1784.7	0.0
1226.4 *4*	35 *5*	1634.2	407.8	1798.2 *6*	40 *3*	1852.8	54.6
1320.5 *5*	22 *5*	1375.1	54.6	1852.8 *4*	32 *3*	1852.8	0.0
1335.9 *6*	100	1390.5	54.6	1858.7 *4*	54 *2*	2266.5	407.8
1336.6 *6*	100	2711.7	1375.1	1867.2 *6*	100	1921.8	54.6
1375.1 *2*	59 *5*	1375.1	0.0	2027.3 *10*	(40) [‡]	3535.6	1508.3
1376.9 *4*	40 *10*	1784.7	407.8	2054.4 *6*	41 *3*	2109.0	54.6

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^{53}Cr(p,γ) res 1975We10 (continued)

γ(^{54}Mn) (continued)

E_γ[#]	I_γ[†]	E_i(level)	E_f	Comments
2078.3 *6*	100	2132.9	54.6	
2084 *2*	40[‡] *10*	3937	1852.8	
2135.3 *4*	50 *10*	2291.6	156.3	
2151.8 *11*	(20)[‡]	3606.0	1454.2	
2177.4 *11*	21 *5*	3811.6	1634.2	
2198.9 *6*	55 *10*	2355.2	156.3	
2203 *2*	25[‡] *10*	4056	1852.8	
2211.9 *6*	28 *2*	2266.5	54.6	
2230.9 *10*	(20)[‡]	3606.0	1375.1	
2237.0 *6*	25 *10*	2291.6	54.6	
2246.7 *20*	20[‡] *10*	3755	1508.3	
2266.5 *4*	18 *2*	2266.5	0.0	
2267.6 *10*	26 *5*	3811.6	1544.0	
2291.6 *4*	25 *10*	2291.6	0.0	
2300.6 *7*	20 *5*	2355.2	54.6	
2303.3 *10*	53 *5*	3811.6	1508.3	
2355.2 *6*	25 *5*	2355.2	0.0	
2365.9 *10*	50 *20*	2773.7	407.8	
2402.2 *6*	80 *10*	2558.5	156.3	
2443.3 *6*	100	2497.9	54.6	Additional information 2.
2495.2 *20*	50 *10*	2903	407.8	Additional information 3.
2501.8 *7*	60 *10*	2556.4	54.6	
2556.4 *6*	40 *10*	2556.4	0.0	
2558.5 *6*	20 *10*	2558.5	0.0	
2604.2 *20*	40 *10*	3012	407.8	
2618.4 *20*	(100)	2673	54.6	
2708.2 *20*	15[‡] *10*	3116	407.8	
2719.1 *11*	50 *20*	2773.7	54.6	
2720.9 *5*	30 *10*	2877.2	156.3	
2753.9 *5*	19 *7*	4262.2	1508.3	
2801 *2*	40 *10*	4176	1375.1	
2808.9 *7*	33 *7*	4262.2	1454.2	
2822.6 *6*	30 *10*	2877.2	54.6	
2848.4 *20*	50 *10*	2903	54.6	
2877.2 *5*	40 *10*	2877.2	0.0	
2926.5 *10*	(40)[‡]	3334.3	407.8	
3056.7 *20*	30 *10*	3213	156.3	
3064.7 *20*	50 *10*	3221	156.3	
3116 *2*	40[‡] *10*	3116	0.0	
3136.4 *20*	20[‡] *10*	3191	54.6	
3150.7 *20*	100	3307	156.3	
3158.4 *20*	40 *10*	3213	54.6	
3166.4 *20*	50 *10*	3221	54.6	
3191 *2*	20[‡] *10*	3191	0.0	
3213 *2*	30 *10*	3213	0.0	
3227.8 *10*	60[‡] *10*	3384.1	156.3	
3265.3 *10*	41 *5*	3673.1	407.8	
3358.7 *10*	100	3358.7	0.0	
3429.0 *10*	100	3585.3	156.3	
3546.7 *10*	(20)[‡]	3546.7	0.0	
3598.7 *20*	50[‡] *10*	3755	156.3	
3648 *2*	15[‡] *10*	4056	407.8	
3673.1 *10*	59 *5*	3673.1	0.0	

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^{53}Cr(p,γ) res 1975We10 (continued)

$\gamma(^{54}Mn)$ (continued)

E_γ [#]	I_γ [†]	E_i(level)	E_f	E_γ [#]	I_γ [†]	E_i(level)	E_f
3688 *2*	40 [‡] *10*	4056	368.2	4154.8 *11*	≈50	4209.4	54.6
3802 *2*	70 *10*	3857	54.6	4158 *2*	50 [‡] *10*	4158	0.0
3857 *2*	30 *10*	3857	0.0	4176 *2*	60 *10*	4176	0.0
3914 *2*	45 *10*	3969	54.6	4209.4 *10*	≈50	4209.4	0.0
3929 *2*	100	4085	156.3	4323.2 *11*	68 *5*	4377.8	54.6
3969 *2*	55 *10*	3969	0.0	4377.8 *10*	32 *1*	4377.8	0.0
4105.9 *6*	48 *7*	4262.2	156.3				

† Photon branching (in percent) is given.
‡ Residual branching ratios are unknown.
# Energies calculated by evaluator from differences in level energies and corrected for recoil.

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Level Scheme

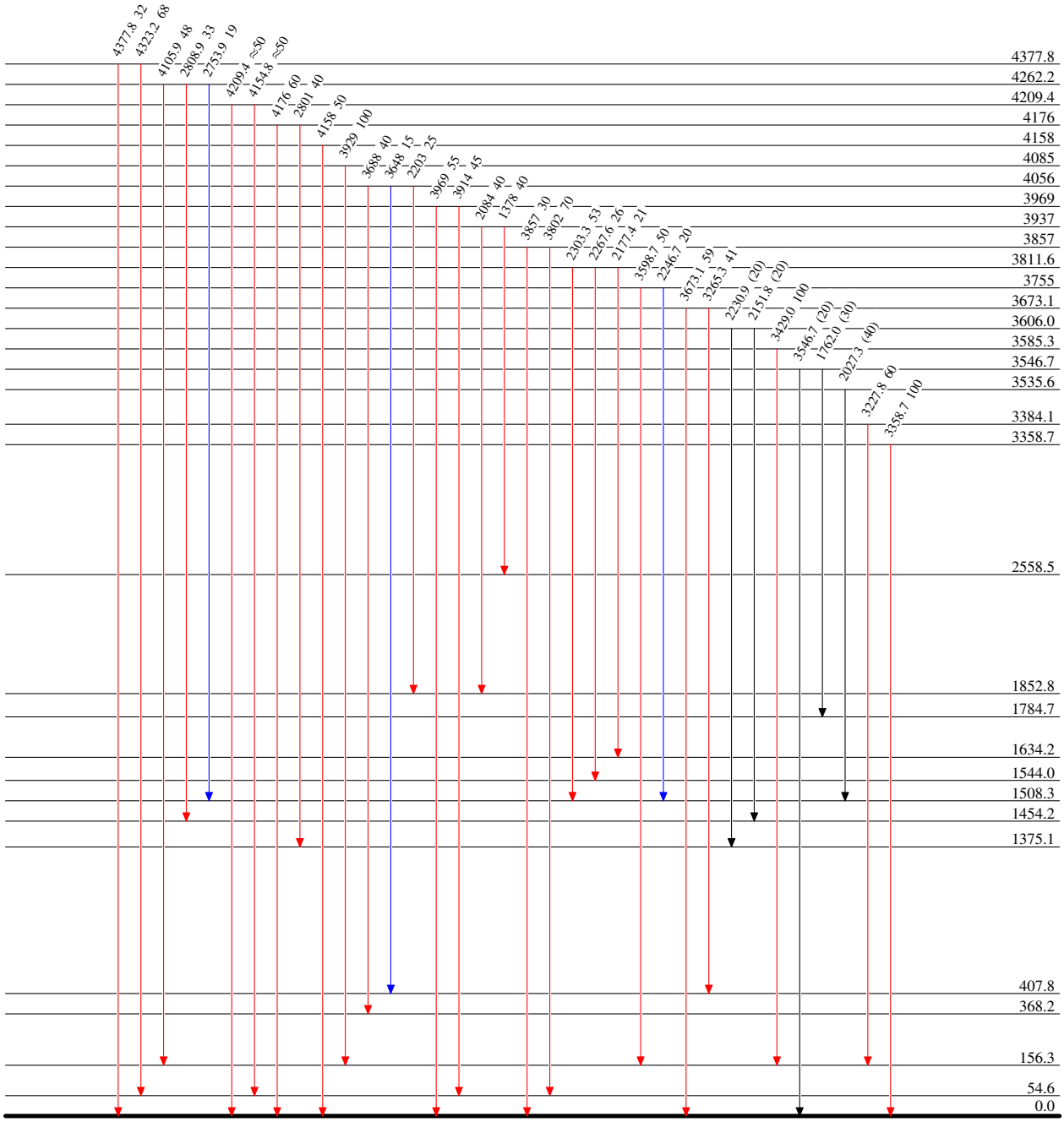
Intensities: Relative I_γ

Legend

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

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

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

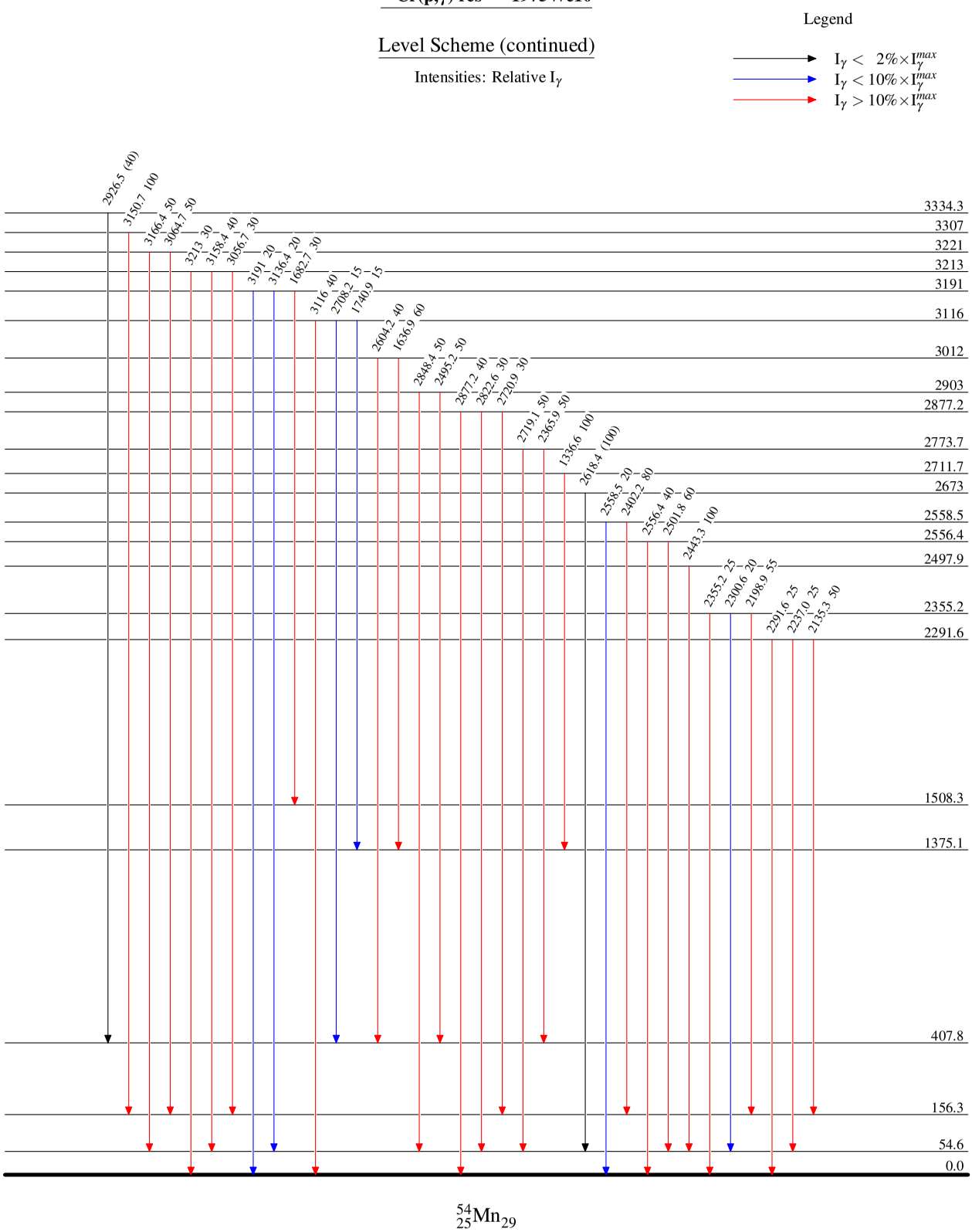


$^{54}_{25}Mn_{29}$

^{53}Cr(p,γ) res 1975We10

Level Scheme (continued)

Intensities: Relative I_γ



$^{54}_{25}Mn_{29}$

^{53}**Cr(p,γ) res 1975We10**

Level Scheme (continued)

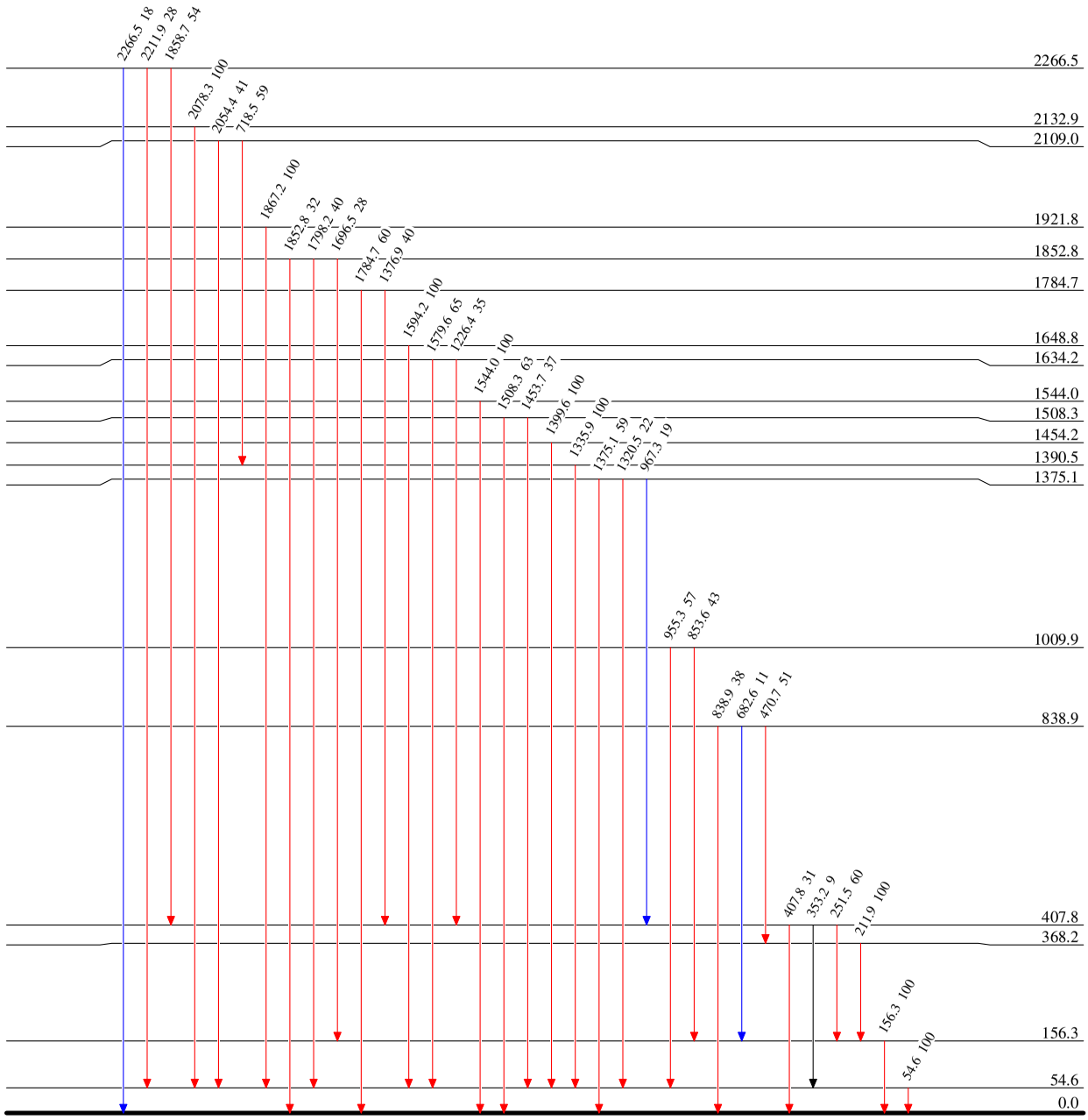
Intensities: Relative I_γ

Legend

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

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

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



$^{54}_{25}Mn_{29}$