^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zhou Chunmei	ENSDF	22-Nov-1999

Target $J^{\pi}=1^{+}$.
1997Ju02: measured Eγ, Iγ, and γ-production cross sections; deduced S(n).
1994Ra17: measured Eγ, Iγ and DSA. Deduced $T_{1/2}$.
1990Is05: measured Eγ, Iγ, and σ(n,γ).
Evaluated S(n)=10833.30 keV (1995Au04).
Measured S(n)=10833.3015 keV *24* (1995Di08), 10833.314 keV *12* (1997Ju02), 10833.64 keV *13* (1980Gr12).

^{15}N Levels

E(level)[†]	J^{π}[‡]	$T_{1/2}$[#]	Comments
0.0	$1/2^{-}$	stable	
5270.164 *13*	$5/2^{+}$	1.79 fs *10*	
5298.824 *15*	$1/2^{+}$	17 fs *5*	
6323.858 *13*	$3/2^{-}$	0.146 fs *8*	
7155.089 *16*	$5/2^{+}$	12 fs *6*	
7300.885 *18*	$3/2^{+}$	0.42 fs *4*	
7563.53 *15*	$7/2^{+}$	8 fs *+8–4*	
8312.635 *20*	$1/2^{+}$	1.2 fs *8*	
8571.20 *4*	$3/2^{+}$	0.5 fs *5*	
9049.58 *6*	$1/2^{+}$	0.35 fs *6*	
9151.97 *5*	$3/2^{-}$	0.97 fs *25*	
9154.934 *18*	$5/2^{+}$	5 fs *+4–2*	
9222.48 *14*	$1/2^{-}$	<90 fs	
9760.26 *7*	$5/2^{-}$	1.8 fs *6*	
9924.88 *5*	$3/2^{-}$	0.21 fs *4*	
10065.45 *7*	$3/2^{+}$	0.069 fs *4*	
10450.3 *4*	$5/2^{-}$		
10701.67 *7*	$3/2^{-}$		
(10833.3015 *24*)	$1/2^{+},3/2^{+}$		J^{π}: from s-wave neutron capture.

[†] From Eγ's using least-squares fit to data.
[‡] From 1996FiZY and 1991Aj01, except as noted.
[#] From 1996FiZY. See also 1994Ra17.

^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05 (continued)

$\gamma(^{15}N)$

E_γ[&]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	Comments
131.44 *7*	0.018 *4*	(10833.3015)	$1/2^+,3/2^+$	10701.67	$3/2^-$			σ(n,γ)=0.015 mb *3* (1997Ju02).
383.0 *4*	0.007 *3*	(10833.3015)	$1/2^+,3/2^+$	10450.3	$5/2^-$			σ(n,γ)=0.006 mb *2* (1997Ju02).
583.75 *4*	0.142 *10*	9154.934	$5/2^+$	8571.20	$3/2^+$			σ(n,γ)=0.115 mb *8* (1997Ju02).
608.3 *5*	0.022 *4*	9760.26	$5/2^-$	9151.97	$3/2^-$			σ(n,γ)=0.018 mb *3* (1997Ju02).
767.84 *7*	0.062 *4*	(10833.3015)	$1/2^+,3/2^+$	10065.45	$3/2^+$			σ(n,γ)=0.050 mb *3* (1997Ju02).
770.4 *5*	0.010 *4*	9924.88	$3/2^-$	9154.934	$5/2^+$			σ(n,γ)=0.008 mb *3* (1997Ju02).
831.22 *11*	0.031 *4*	7155.089	$5/2^+$	6323.858	$3/2^-$			σ(n,γ)=0.025 mb *3* (1997Ju02).
908.41 *4*	0.159 *5*	(10833.3015)	$1/2^+,3/2^+$	9924.88	$3/2^-$			σ(n,γ)=0.129 mb *4* (1997Ju02).
1011.68 *4*	0.136 *5*	8312.635	$1/2^+$	7300.885	$3/2^+$	M1[‡]		σ(n,γ)=0.110 mb *4* (1997Ju02).
1025.2 *3*	0.016 *3*	6323.858	$3/2^-$	5298.824	$1/2^+$	E1[‡]		σ(n,γ)=0.013 mb *2* (1997Ju02).
1053.9 *3*	0.015 *4*	6323.858	$3/2^-$	5270.164	$5/2^+$			σ(n,γ)=0.012 mb *3* (1997Ju02).
1073.02 *7*	0.088 *5*	(10833.3015)	$1/2^+,3/2^+$	9760.26	$5/2^-$			σ(n,γ)=0.071 mb *4* (1997Ju02).
1610.79 *14*	0.073 *6*	(10833.3015)	$1/2^+,3/2^+$	9222.48	$1/2^-$			σ(n,γ)=0.059 mb *5* (1997Ju02).
1678.293 *25*	7.96 *9*	(10833.3015)	$1/2^+,3/2^+$	9154.934	$5/2^+$			Iγ=7.23 *18* (1991Aj01). σ(n,γ)=6.39 mb *7* (1997Ju02).
1681.228 *50*	1.63 *4*	(10833.3015)	$1/2^+,3/2^+$	9151.97	$3/2^-$			Iγ=1.54 *15* (1991Aj01). σ(n,γ)=1.32 mb *3* (1997Ju02).
1783.63 *6*	0.247 *9*	(10833.3015)	$1/2^+,3/2^+$	9049.58	$1/2^+$			σ(n,γ)=0.200 mb *7* (1997Ju02).
1853.98 *4*	0.645 *9*	9154.934	$5/2^+$	7300.885	$3/2^+$			σ(n,γ)=0.522 mb *7* (1997Ju02).
1884.780 *18*	18.77 *20*	7155.089	$5/2^+$	5270.164	$5/2^+$	[M1+E2]	+0.014 *+15−14*	Iγ=18.66 *25* (1991Aj01). σ(n,γ)=15.07 mb *16* (1997Ju02).
1988.46 *25*	0.32 *5*	8312.635	$1/2^+$	6323.858	$3/2^-$	E1[‡]		Iγ=0.37 *9* (1991Aj01). σ(n,γ)=0.26 mb *4* (1997Ju02).
1999.679 *27*	4.11 *5*	9154.934	$5/2^+$	7155.089	$5/2^+$			Iγ=3.99 *9* (1991Aj01). σ(n,γ)=3.30 mb *4* (1997Ju02).
2002.3 *4*	0.24 *5*	7300.885	$3/2^+$	5298.824	$1/2^+$	M1[‡]		σ(n,γ)=0.19 mb *4* (1997Ju02).
2030.8 *4*	0.069 *15*	7300.885	$3/2^+$	5270.164	$5/2^+$			σ(n,γ)=0.056 mb *12* (1997Ju02).
2247.4 *5*	0.015 *4*	8571.20	$3/2^+$	6323.858	$3/2^-$	E1[‡]		σ(n,γ)=0.012 mb *3* (1997Ju02).
2261.83 *10*	0.077 *5*	(10833.3015)	$1/2^+,3/2^+$	8571.20	$3/2^+$			σ(n,γ)=0.062 mb *4* (1997Ju02).
2293.15 *16*	0.045 *5*	7563.53	$7/2^+$	5270.164	$5/2^+$	[M1+E2]	+0.028 *12*	σ(n,γ)=0.036 mb *4* (1997Ju02).
2520.443 *22*	5.58 *9*	(10833.3015)	$1/2^+,3/2^+$	8312.635	$1/2^+$			Iγ=5.79 *7* (1991Aj01). σ(n,γ)=4.48 mb *7* (1997Ju02).
2726.0 *5*	0.020 *5*	9049.58	$1/2^+$	6323.858	$3/2^-$	E1[‡]		σ(n,γ)=0.016 mb *4* (1997Ju02).
2830.805 *36*	1.71 *4*	9154.934	$5/2^+$	6323.858	$3/2^-$			Iγ=1.75 *3* (1991Aj01). σ(n,γ)=1.37 mb *3* (1997Ju02).
2898.4 *5*	0.022 *5*	9222.48	$1/2^-$	6323.858	$3/2^-$			σ(n,γ)=0.018 mb *4* (1997Ju02).
3013.55 *10*	0.644 *21*	8312.635	$1/2^+$	5298.824	$1/2^+$	M1[‡]		Iγ=0.69 *2* (1991Aj01). σ(n,γ)=0.521 mb *17* (1997Ju02).
3269.2 *4*	0.06 *1*	(10833.3015)	$1/2^+,3/2^+$	7563.53	$7/2^+$			σ(n,γ)=0.049 mb *9* (1997Ju02).

$^{15}_{7}N_{8}$-2

^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05 (continued)

γ(^{15}N) (continued)

E_γ[&]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	Comments
3300.74 *13*	0.150 *11*	8571.20	3/2$^+$	5270.164	5/2$^+$	[M1+E2]	+0.091 *7*	Iγ=0.16 *2* (1991Aj01). σ(n,γ)=0.121 mb *9* (1997Ju02).
3531.982 *20*	8.94[@] *11*	(10833.3015)	1/2$^+$,3/2$^+$	7300.885	3/2$^+$			Iγ=9.24 *9* (1991Aj01). σ(n,γ)=7.18 mb *9* (1997Ju02).
3677.737 *17*	14.52[@] *16*	(10833.3015)	1/2$^+$,3/2$^+$	7155.089	5/2$^+$			Iγ=14.89 *15* (1991Aj01). σ(n,γ)=11.66 mb *13* (1997Ju02).
3855.60 *7*	0.811 *26*	9154.934	5/2$^+$	5298.824	1/2$^+$			Iγ=0.70 *1* (1991Aj01). σ(n,γ)=0.656 mb *21* (1997Ju02).
3880.9 *9*	0.048 *16*	9151.97	3/2$^-$	5270.164	5/2$^+$			σ(n,γ)=0.039 mb *13* (1997Ju02).
3884.20 *9*	0.564 *22*	9154.934	5/2$^+$	5270.164	5/2$^+$			Iγ=0.57 *2* (1991Aj01). σ(n,γ)=0.456 mb *18* (1997Ju02).
3923.9 *6*	0.037 *9*	9222.48	1/2$^-$	5298.824	1/2$^+$			σ(n,γ)=0.030 mb *7* (1997Ju02).
4508.731 *17*	16.71[@] *17*	(10833.3015)	1/2$^+$,3/2$^+$	6323.858	3/2$^-$			Iγ=16.54 *17* (1991Aj01). σ(n,γ)=13.42 mb *14* (1997Ju02).
4654.1 *11*	0.028 *6*	9924.88	3/2$^-$	5270.164	5/2$^+$			σ(n,γ)=0.023 mb *5* (1997Ju02).
5269.162 *17*	29.86[@] *30*	5270.164	5/2$^+$	0.0	1/2$^-$	[M2+E3]	−0.131 *13*	Iγ=30.03 *20* (1991Aj01). σ(n,γ)=23.98 mb *24* (1997Ju02).
5297.826 *20*	21.23[@] *22*	5298.824	1/2$^+$	0.0	1/2$^-$			Iγ=21.31 *18* (1991Aj01). σ(n,γ)=17.05 mb *18* (1997Ju02).
5533.391 *18*	19.58[@] *21*	(10833.3015)	1/2$^+$,3/2$^+$	5298.824	1/2$^+$			Iγ=19.75 *21* (1991Aj01). σ(n,γ)=15.72 mb *17* (1997Ju02).
5562.059 *21*	10.68[@] *12*	(10833.3015)	1/2$^+$,3/2$^+$	5270.164	5/2$^+$			Iγ=10.65 *12* (1991Aj01). σ(n,γ)=8.58 mb *10* (1997Ju02).
6322.433 *16*	18.23[@] *22*	6323.858	3/2$^-$	0.0	1/2$^-$	[M1+E2]	−0.132 *4*	Iγ=18.67 *14* (1991Aj01). σ(n,γ)=14.64 mb *18* (1997Ju02).
7153.4 *4*	0.063 *7*	7155.089	5/2$^+$	0.0	1/2$^-$			σ(n,γ)=0.051 mb *6* (1997Ju02).
7298.980 *32*	9.39[@] *12*	7300.885	3/2$^+$	0.0	1/2$^-$	[E1+M2]	−0.017 *+5−8*	Iγ=9.73 *9* (1991Aj01). σ(n,γ)=7.54 mb *10* (1997Ju02).
8310.156 *39*	4.12[@] *9*	8312.635	1/2$^+$	0.0	1/2$^-$	E1[‡]		Iγ=4.22 *5* (1991Aj01). σ(n,γ)=3.31 mb *7* (1997Ju02).
8568.6 *4*	0.069 *7*	8571.20	3/2$^+$	0.0	1/2$^-$	[E1+M2]	−0.085 *+5−9*	Iγ=0.073 *4* (1991Aj01). σ(n,γ)=0.056 mb *5* (1997Ju02).
9046.71 *17*	0.202 *11*	9049.58	1/2$^+$	0.0	1/2$^-$	E1[‡]		Iγ=0.186 *5* (1991Aj01). σ(n,γ)=0.163 mb *9* (1997Ju02).
9148.95 *9*	1.47 *6*	9151.97	3/2$^-$	0.0	1/2$^-$			Iγ=1.6 *2* (1991Aj01). σ(n,γ)=1.19 mb *5* (1997Ju02).
9151.9 *7*	0.15 *4*	9154.934	5/2$^+$	0.0	1/2$^-$			σ(n,γ)=0.12 mb *3* (1997Ju02).
9219.5 *11*	0.019 *7*	9222.48	1/2$^-$	0.0	1/2$^-$			Iγ=0.024 *5* (1991Aj01). σ(n,γ)=0.015 mb *6* (1997Ju02).
9757.1 *5*	0.056 *6*	9760.26	5/2$^-$	0.0	1/2$^-$			σ(n,γ)=0.045 mb *5* (1997Ju02).

^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05 (continued)

$\gamma(^{15}N)$ (continued)

E_γ[&]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	Comments
9921.3 *3*	0.126 *10*	9924.88	$3/2^-$	0.0	$1/2^-$			Iγ=0.127 *4* (1991Aj01). σ(n,γ)=0.102 mb *8* (1997Ju02).
10061.9 *5*	0.057 *6*	10065.45	$3/2^+$	0.0	$1/2^-$			Iγ=0.062 *4* (1991Aj01). σ(n,γ)=0.046 mb *5* (1997Ju02).
10697.8 *17*	0.010 *5*	10701.67	$3/2^-$	0.0	$1/2^-$	[M1+E2]	−0.180 *+2−6*	Iγ=0.062 *4* (1991Aj01). σ(n,γ)=0.008 mb *4* (1997Ju02).
10829.110 *59*	14.3[@] *6*	(10833.3015)	$1/2^+$,$3/2^+$	0.0	$1/2^-$			Iγ=13.65 *21* (1991Aj01). σ(n,γ)=11.5 mb *5* (1997Ju02).

† From 1996FiZY and 1991Aj01, except as noted.
‡ From 1994Ra17.
# Intensities per 100 neutron captures. Values deduced from σ(n,γ) of 1997Ju02, except as noted.
@ From table 3 in 1997Ju02.
& From 1997Ju02, except as noted.
a Intensity per 100 neutron captures.

$^{15}_{7}N_{8}$-4

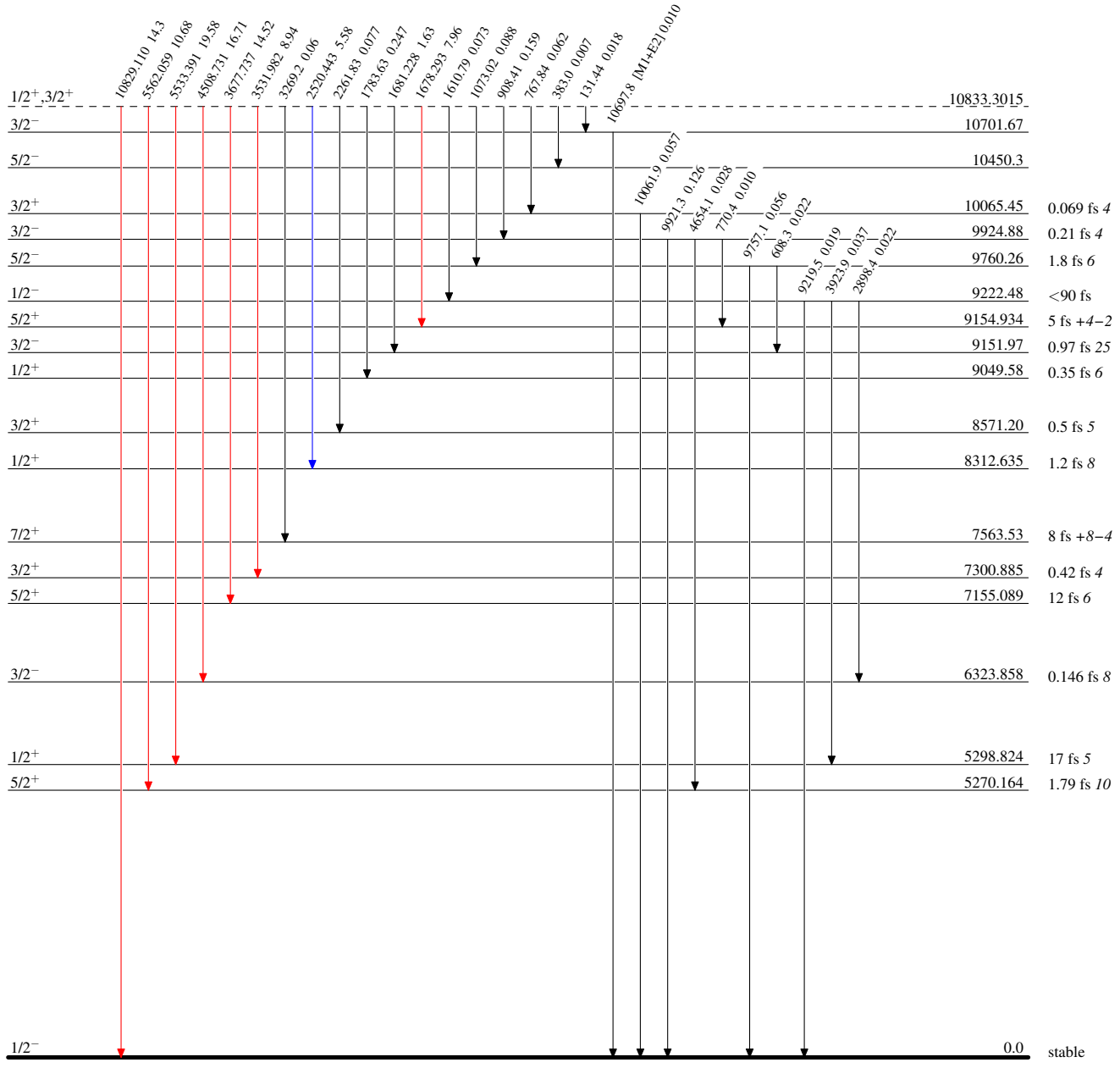
^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05

Legend

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

Level Scheme

Intensities: I_γ per 100 neutron captures

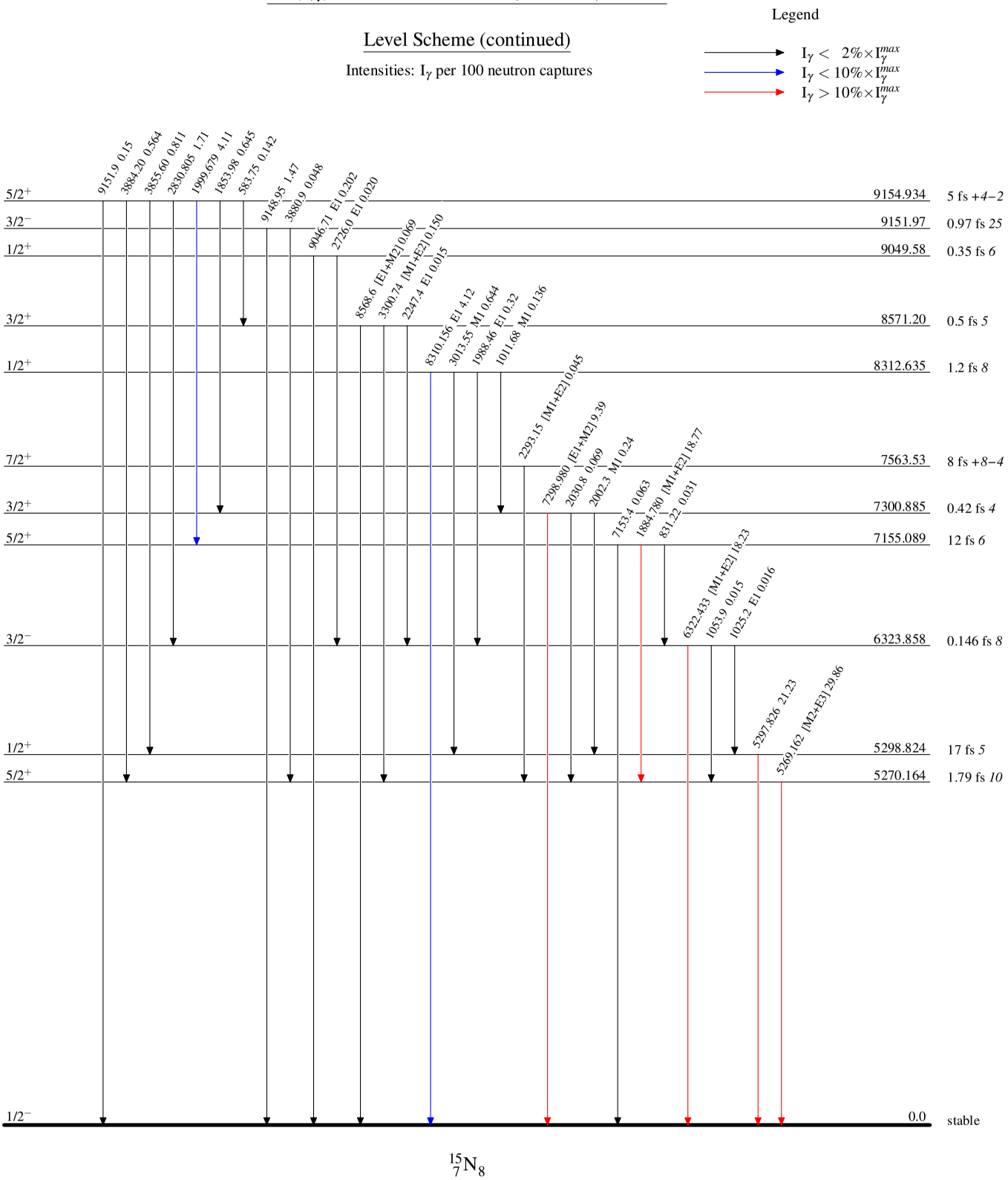


$^{15}_{7}N_{8}$

^{14}N(n,γ) E=thermal 1997Ju02,1994Ra17,1990Is05

Level Scheme (continued)

Intensities: I_γ per 100 neutron captures



$^{15}_{7}N_{8}$