^{122}Sn(^{27}Al,5nγ):SD 1997Ha06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

Additional information 1.

1997Ha06 (also 1994MuZV), 1993Mu16: ^{122}Sn(^{27}Al,5nγ) E=142 MeV. 1993Mu16 reported existence of an SD band deduced from the observation of a ridge structure in the $\gamma\gamma$ coin matrix with the half-width of the of the valley≈59 keV. This width is similar to the spacing of γ rays in SD bands of ^{143}Eu and ^{142}Sm. In the later work (1997Ha06) SD bands with discrete transitions are reported using GAMMASPHERE array of 36 HPGe detectors.

^{144}Eu Levels

E(level)	J^π	E(level)	J^π	E(level)	J^π
x‡	J≈(36)†	2422.5+y# *5*	J+8	1271.4+z@ *6*	J+4
878.6+x‡ *6*	J+2	3192.0+y# *6*	J+10	2002.5+z@ *7*	J+6
1781.3+x‡ *8*	J+4	4027.6+y# *7*	J+12	2796.7+z@ *7*	J+8
2734.0+x‡ *10*	J+6	4928.3+y# *7*	J+14	3654.6+z@ *8*	J+10
3745.7+x‡ *11*	J+8	5894.7+y# *8*	J+16	4573.6+z@ *15*	J+12
4815.0+x‡ *13*	J+10	6926.4+y# *9*	J+18	5555.1+z@ *15*	J+14
5943.0+x‡ *14*	J+12	8022.0+y# *10*	J+20	6598.5+z@ *16*	J+16
7129.1+x‡ *16*	J+14	9181.6+y# *11*	J+22	7703.1+z@ *17*	J+18
8374.0+x‡ *17*	J+16	10403.2+y# *13*	J+24	8868.4+z@ *18*	J+20
9676.2+x‡ *19*	J+18	11685.2+y# *15*	J+26	10095.2+z@ *20*	J+22
11039.5+x‡ *21*	J+20	13019.8+y# *16*	J+28	11379.5+z@ *21*	J+24
12460.9+x‡ *24*	J+22	14390.6+y# *19*	J+30	12724.0+z@ *23*	J+26
13940+x‡ *4*	J+24	15787.1+y# *22*	J+32	14127.2+z@ *25*	J+28
y#	J≈(20)†	17217.6+y# *23*	J+34	15593.2+z@ *26*	J+30
506.9+y# *3*	J+2	18684.6+y# *30*	J+36	17121.2+z@ *30*	J+32
1079.8+y# *4*	J+4	z@	J	18710.5+z@ *32*	J+34
1718.6+y# *5*	J+6	603.2+z@ *4*	J+2		

† Proposed by 1997Ha06 from spin-fit method.

‡ Band(A): SD-1 band (1997Ha06,1993Mu16). Percent population=0.14 *4* (1997Ha06). Configuration=$\pi 6^1 \nu 7^1$ interacting with 9/2[514] orbital (1997Ha06).

Band(B): SD-2 band (1997Ha06). Percent population=0.14 *4* (1997Ha06). α=−1/2 of a configuration with $\pi 6^1$ and ν to a mixture of [651]1/2$^+$ and [642]5/2$^+$ orbitals (1997Ha06).

@ Band(C): SD-3 band (1997Ha06). Percent population=0.17 *4* (1997Ha06). α=+1/2 of a configuration with $\pi 6^1$ and ν to a mixture of [651]1/2$^+$ and [642]5/2$^+$ orbitals (1997Ha06).

$\gamma(^{144}Eu)$

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
506.9 *3*	0.36 *8*	506.9+y	J+2	y	J≈(20)
572.9 *2*	0.65 *12*	1079.8+y	J+4	506.9+y	J+2
603.2 *4*	0.61 *14*	603.2+z	J+2	z	J
638.8 *2*	0.76 *13*	1718.6+y	J+6	1079.8+y	J+4
668.2 *4*	0.61 *9*	1271.4+z	J+4	603.2+z	J+2
703.9 *3*	0.61 *9*	2422.5+y	J+8	1718.6+y	J+6
731.1 *3*	0.63 *9*	2002.5+z	J+6	1271.4+z	J+4

Continued on next page (footnotes at end of table)

^{122}Sn(^{27}Al,5nγ):SD 1997Ha06 (continued)

$\gamma(^{144}Eu)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π
769.5 *2*	0.81 *9*	3192.0+y	J+10	2422.5+y	J+8
794.2 *3*	0.57 *9*	2796.7+z	J+8	2002.5+z	J+6
835.6 *3*	0.93 *10*	4027.6+y	J+12	3192.0+y	J+10
857.9 *3*	1.06 *10*	3654.6+z	J+10	2796.7+z	J+8
878.6 *6*	0.39 *8*	878.6+x	J+2	x	J≈(36)
900.7 *3*	0.86 *11*	4928.3+y	J+14	4027.6+y	J+12
902.7 *4*	0.63 *8*	1781.3+x	J+4	878.6+x	J+2
919.1 *12*	0.96 *10*	4573.6+z	J+12	3654.6+z	J+10
952.7 *6*	0.57 *12*	2734.0+x	J+6	1781.3+x	J+4
966.4 *3*	0.82 *10*	5894.7+y	J+16	4928.3+y	J+14
981.5 *4*	0.99 *10*	5555.1+z	J+14	4573.6+z	J+12
1011.7 *5*	0.96 *13*	3745.7+x	J+8	2734.0+x	J+6
1031.7 *4*	0.85 *11*	6926.4+y	J+18	5894.7+y	J+16
1043.4 *6*	1.16 *13*	6598.5+z	J+16	5555.1+z	J+14
1069.3 *6*	0.88 *14*	4815.0+x	J+10	3745.7+x	J+8
1095.6 *5*	0.63 *8*	8022.0+y	J+20	6926.4+y	J+18
1104.5 *6*	0.68 *10*	7703.1+z	J+18	6598.5+z	J+16
1128.0 *6*	0.85 *13*	5943.0+x	J+12	4815.0+x	J+10
1159.6 *5*	0.63 *9*	9181.6+y	J+22	8022.0+y	J+20
1165.3 *6*	0.65 *9*	8868.4+z	J+20	7703.1+z	J+18
1186.1 *7*	0.64 *14*	7129.1+x	J+14	5943.0+x	J+12
1221.6 *5*	0.52 *8*	10403.2+y	J+24	9181.6+y	J+22
1226.8 *7*	0.47 *8*	10095.2+z	J+22	8868.4+z	J+20
1244.9 *6*	0.71 *11*	8374.0+x	J+16	7129.1+x	J+14
1282.0 *8*	0.50 *7*	11685.2+y	J+26	10403.2+y	J+24
1284.3 *6*	0.56 *9*	11379.5+z	J+24	10095.2+z	J+22
1302.2 *8*	0.59 *11*	9676.2+x	J+18	8374.0+x	J+16
1334.6 *6*	0.45 *6*	13019.8+y	J+28	11685.2+y	J+26
1344.5 *10*	0.43 *8*	12724.0+z	J+26	11379.5+z	J+24
1363.3 *9*	0.57 *11*	11039.5+x	J+20	9676.2+x	J+18
1370.8 *9*	0.28 *6*	14390.6+y	J+30	13019.8+y	J+28
1396.5 *11*	0.23 *5*	15787.1+y	J+32	14390.6+y	J+30
1403.2 *10*	0.41 *7*	14127.2+z	J+28	12724.0+z	J+26
1421.4 *12*	0.46 *13*	12460.9+x	J+22	11039.5+x	J+20
1430.5 *9*	0.19 *5*	17217.6+y	J+34	15787.1+y	J+32
1466.0 *7*	0.34 *6*	15593.2+z	J+30	14127.2+z	J+28
1467 *1*	0.10 *5*	18684.6+y	J+36	17217.6+y	J+34
1478.6 *21*	0.40 *18*	13940+x	J+24	12460.9+x	J+22
1528.0 *13*	0.20 *4*	17121.2+z	J+32	15593.2+z	J+30
1589.3 *10*	0.16 *5*	18710.5+z	J+34	17121.2+z	J+32

^{122}Sn(^{27}Al,5nγ):SD 1997Ha06

Level Scheme

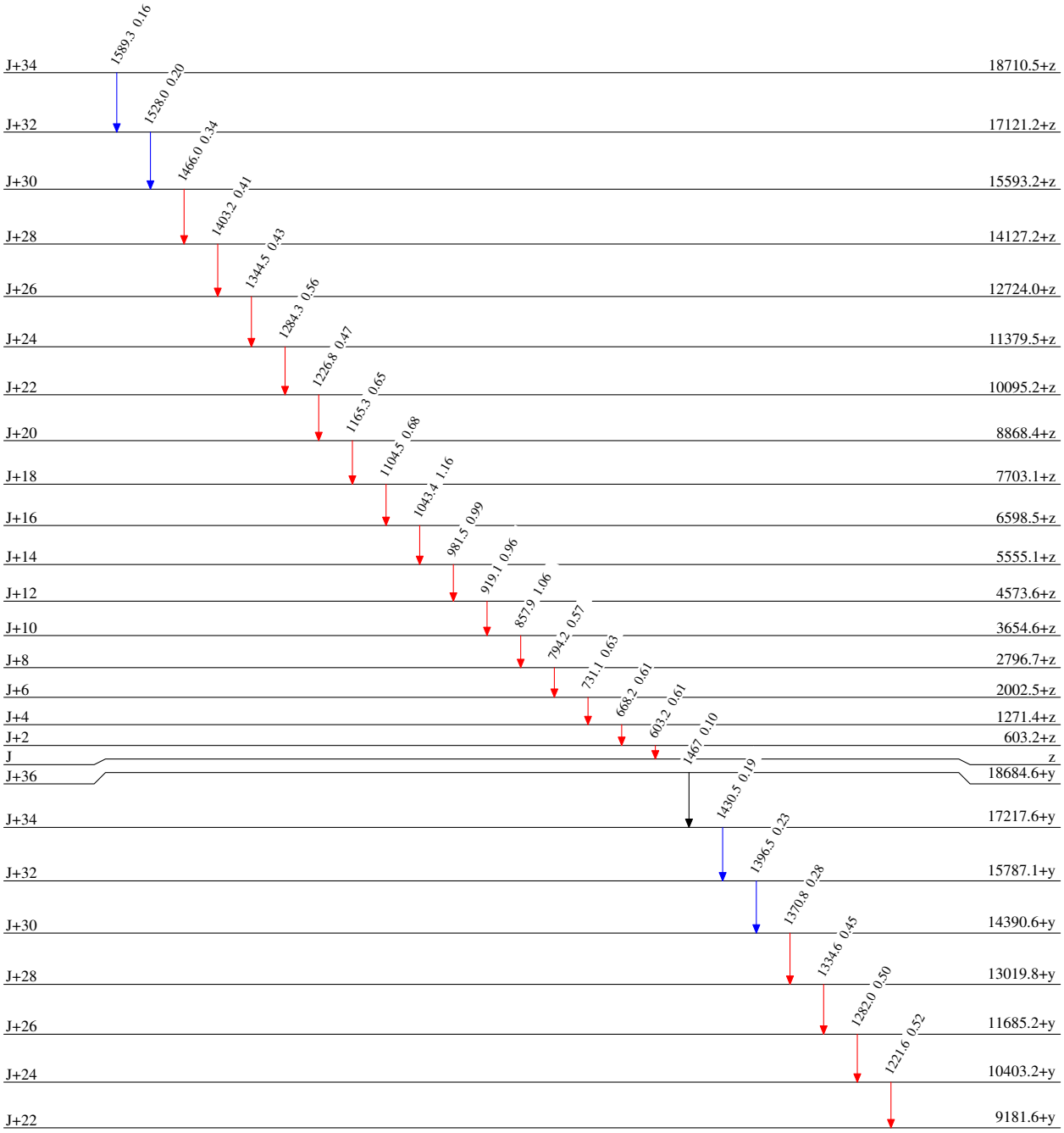
Intensities: Type not specified

Legend

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

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

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



$^{144}_{63}Eu_{81}$

^{122}Sn(^{27}Al,5nγ):SD 1997Ha06

Level Scheme (continued)

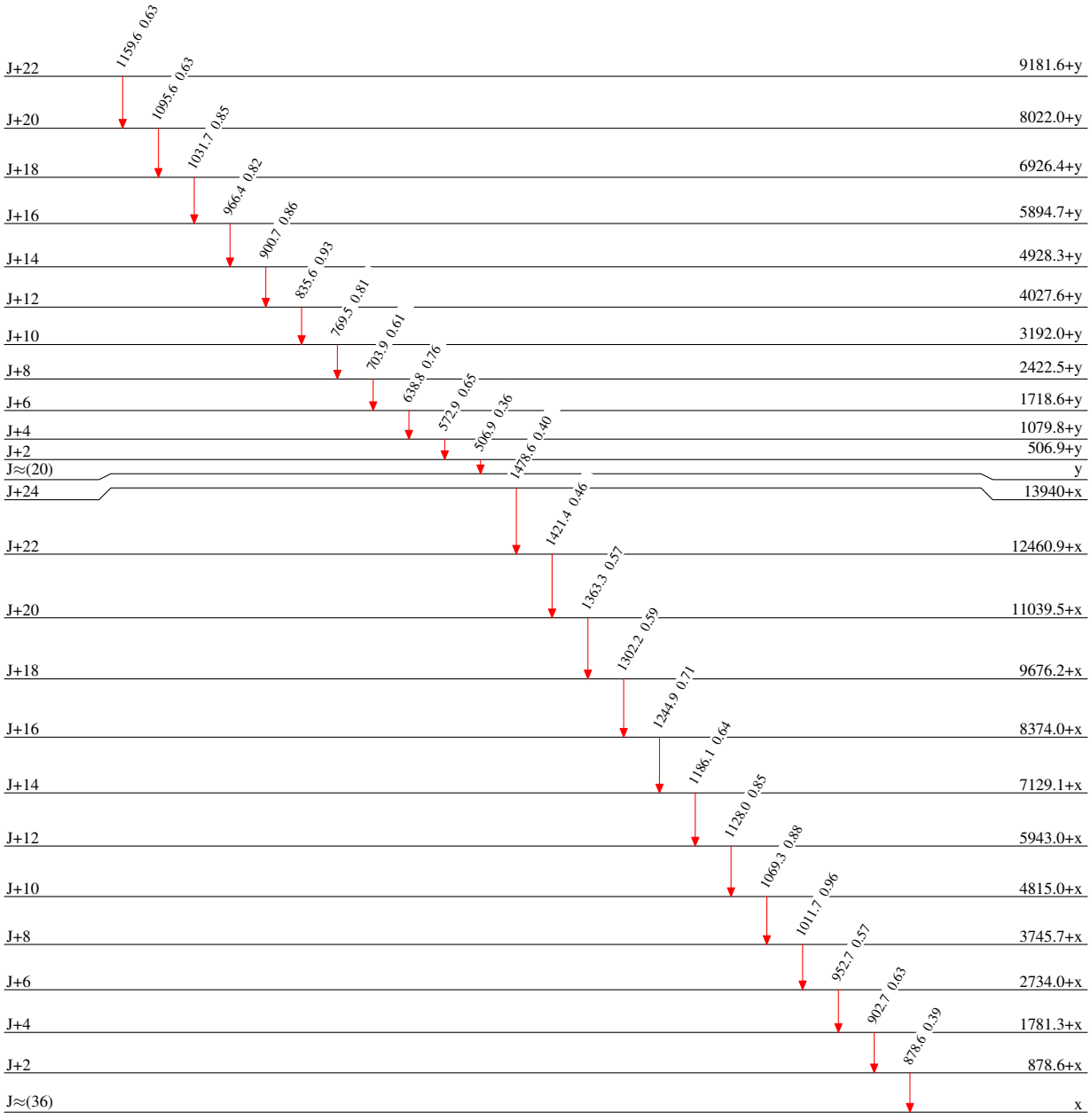
Intensities: Type not specified

Legend

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

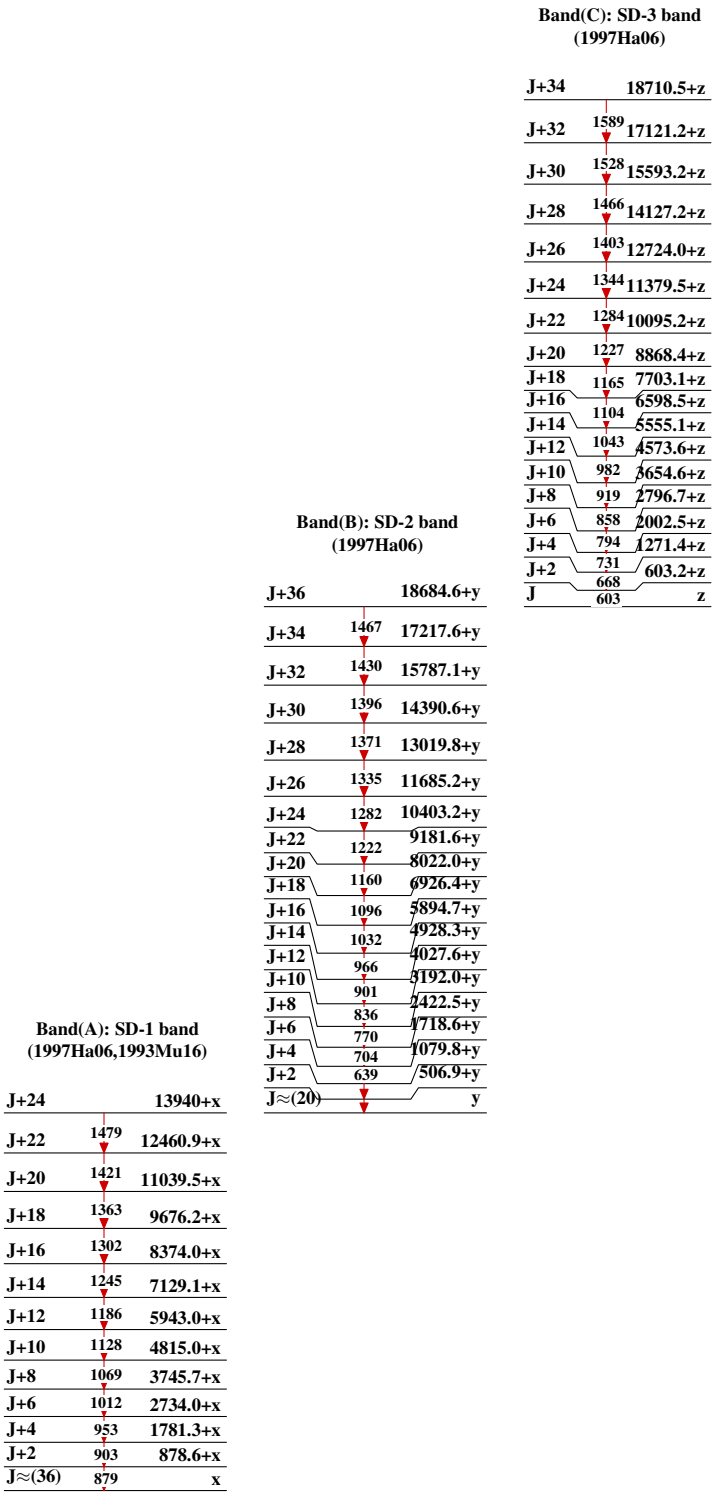
$I_\gamma < 10\% \times I_\gamma^{max}$

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



$^{144}_{63}Eu_{81}$

^{122}Sn(^{27}Al,5nγ):SD 1997Ha06



$^{144}_{63}Eu_{81}$