(HI,xnγ):SD 2001Pr06,2004Re08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

See also 1991Wa14, 1994Cl02, 1996Hi13.

2001Pr06: ^{186}W(^{18}O,6nγ), E=117 MeV; measured γ-ray with EUROBALL spectrometer comprising an inner-ball of 210 BGO crystals, and 71 Compton-suppressed Ge detectors which represent 239 Ge individual crystals.

1991Wa14: ^{154}Sm(^{48}Ca,4nγ) E=205, 210 MeV. Population of SD band through γ and γγ studies. The SD-1 band identified from excitation function data and other characteristics. It is populated with 1% intensity of the total for ^{198}Pb.

Population of this SD-1 band is not verified in later work of 1992ZwZZ, so it is considered uncertain.

1994Cl02: ^{186}W(^{18}O,6nγ) E=113 MeV. Measured Eγ, Iγ, γγγ, SD band using EUROGAM array (43 detectors).

1996Hi13: ^{186}W(^{18}O,6nγ) E=115 MeV. Measured Eγ, Iγ, γγγ, SD band using EUROGAM array of 30 large HPGe detectors and 24 "Clover" detectors.

^{198}Pb Levels

E(level)	J^{π}@	E(level)	J^{π}@	E(level)	J^{π}@
0+x†&	J≈(12)#	9121.7+x& *21*	J+30	7529.0+y[a] *20*	38
304.4+x& *5*	J+2	0+y†[a]	10‡	0+z†[b]	8‡
652.1+x& *7*	J+4	281.4+y[a] *6*	12	215.8+z[b] *6*	10
1042.4+x& *9*	J+6	605.5+y[a] *8*	14	475.4+z[b] *8*	12
1474.8+x& *10*	J+8	971.1+y[a] *10*	16	778.0+z[b] *10*	14
1948.6+x& *11*	J+10	1377.8+y[a] *11*	18	1122.6+z[b] *11*	16
2463.2+x& *12*	J+12	1825.7+y[a] *12*	20	1508.9+z[b] *12*	18
3018.0+x& *13*	J+14	2313.9+y[a] *13*	22	1937.4+z[b] *13*	20
3651.4+x& *14*	J+16	2841.8+y[a] *14*	24	2406.2+z[b] *14*	22
4323.2+x& *15*	J+18	3409.0+y[a] *15*	26	2914.4+z[b] *15*	24
5032.6+x& *16*	J+20	4014.4+y[a] *16*	28	3462.2+z[b] *16*	26
5779.3+x& *17*	J+22	4656.2+y[a] *17*	30	4048.6+z[b] *17*	28
6562.0+x& *17*	J+24	5332.5+y[a] *17*	32	4672.4+z[b] *17*	30
7380.5+x& *18*	J+26	6038.2+y[a] *18*	34	5332.4+z[b] *18*	32
8231.7+x& *20*	J+28	6769.9+y[a] *19*	36	6028.2+z[b] *19*	34

† Band head energy undetermined.

‡ From theoretical calculations and comparisons with known configurations of the neighbouring nuclei (2004Re08).

Spin-fit method gives J≈(12) (1994Cl02).

@ From feeding of normal deformed states (2001Pr06,1996Hi13) and rotational model fits to Eγ′s within a superdeformed band and assuming ΔJ=2 for transitions between levels.

& Band(A): SD-1 band (2001Pr06,1996Hi13,1994Cl02,1991Wa14). Percent population≈0.5 (1996Hi13), ≤0.5 (1994Cl02), 1.0 (1991Wa14), 0.5 (2001Pr06).

[a] Band(B): SD-2 band (2001Pr06). band-head spin: 10 (2004Re08).

[b] Band(C): SD-3 band (2001Pr06). band-head spin: 8 (2004Re08).

(HI,xnγ):SD 2001Pr06,2004Re08 (continued)

$\gamma(^{198}Pb)$

E_γ †	E_i(level)	J^π_i	E_f	J^π_f	E_γ †	E_i(level)	J^π_i	E_f	J^π_f
215.8 *6*	215.8+z	10	0+z	8	547.8 *5*	3462.2+z	26	2914.4+z	24
259.6 *5*	475.4+z	12	215.8+z	10	554.8 *5*	3018.0+x	J+14	2463.2+x	J+12
281.4 *6*	281.4+y	12	0+y	10	567.2 *5*	3409.0+y	26	2841.8+y	24
302.6 *5*	778.0+z	14	475.4+z	12	586.4 *5*	4048.6+z	28	3462.2+z	26
304.4 *5*	304.4+x	J+2	0+x	J≈(12)	605.4 *5*	4014.4+y	28	3409.0+y	26
324.1 *5*	605.5+y	14	281.4+y	12	623.8 *5*	4672.4+z	30	4048.6+z	28
344.6 *5*	1122.6+z	16	778.0+z	14	633.4 *5*	3651.4+x	J+16	3018.0+x	J+14
347.7 *5*	652.1+x	J+4	304.4+x	J+2	641.8 *5*	4656.2+y	30	4014.4+y	28
365.6 *5*	971.1+y	16	605.5+y	14	660.0 *5*	5332.4+z	32	4672.4+z	30
386.3 *5*	1508.9+z	18	1122.6+z	16	671.8 *5*	4323.2+x	J+18	3651.4+x	J+16
390.3 *4*	1042.4+x	J+6	652.1+x	J+4	676.3 *5*	5332.5+y	32	4656.2+y	30
406.7 *5*	1377.8+y	18	971.1+y	16	695.8 *6*	6028.2+z	34	5332.4+z	32
428.5 *5*	1937.4+z	20	1508.9+z	18	705.7 *5*	6038.2+y	34	5332.5+y	32
432.4 *5*	1474.8+x	J+8	1042.4+x	J+6	709.4 *5*	5032.6+x	J+20	4323.2+x	J+18
447.9 *5*	1825.7+y	20	1377.8+y	18	731.7 *5*	6769.9+y	36	6038.2+y	34
468.8 *5*	2406.2+z	22	1937.4+z	20	746.7 *5*	5779.3+x	J+22	5032.6+x	J+20
473.8 *5*	1948.6+x	J+10	1474.8+x	J+8	759.1 *6*	7529.0+y	38	6769.9+y	36
488.2 *5*	2313.9+y	22	1825.7+y	20	782.7 *5*	6562.0+x	J+24	5779.3+x	J+22
508.2 *5*	2914.4+z	24	2406.2+z	22	818.5 *6*	7380.5+x	J+26	6562.0+x	J+24
514.6 *5*	2463.2+x	J+12	1948.6+x	J+10	851.2 *7*	8231.7+x	J+28	7380.5+x	J+26
527.9 *5*	2841.8+y	24	2313.9+y	22	890.0 *8*	9121.7+x	J+30	8231.7+x	J+28

† From 2001Pr06. See also 1996Hi13, 1994Cl02 and 1991Wa14 for γ-ray of SD-1 band.

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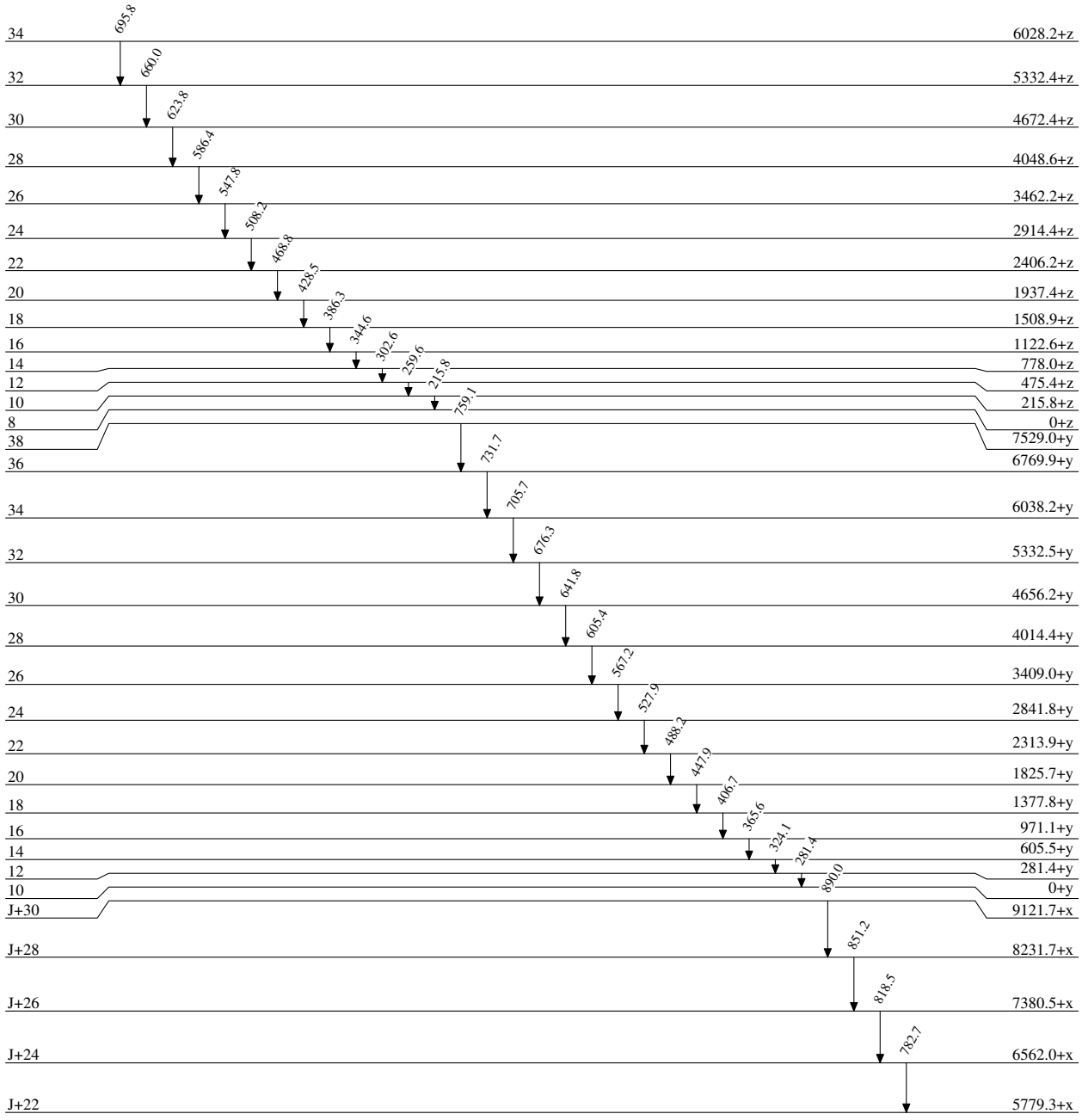
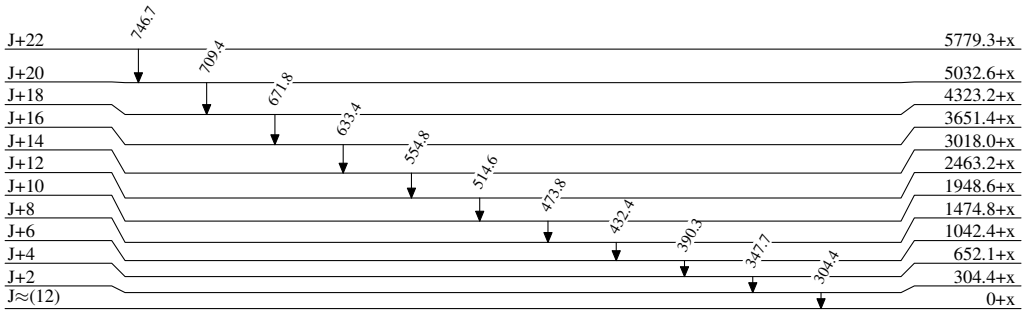
Level Scheme



$^{198}_{82}Pb_{116}$

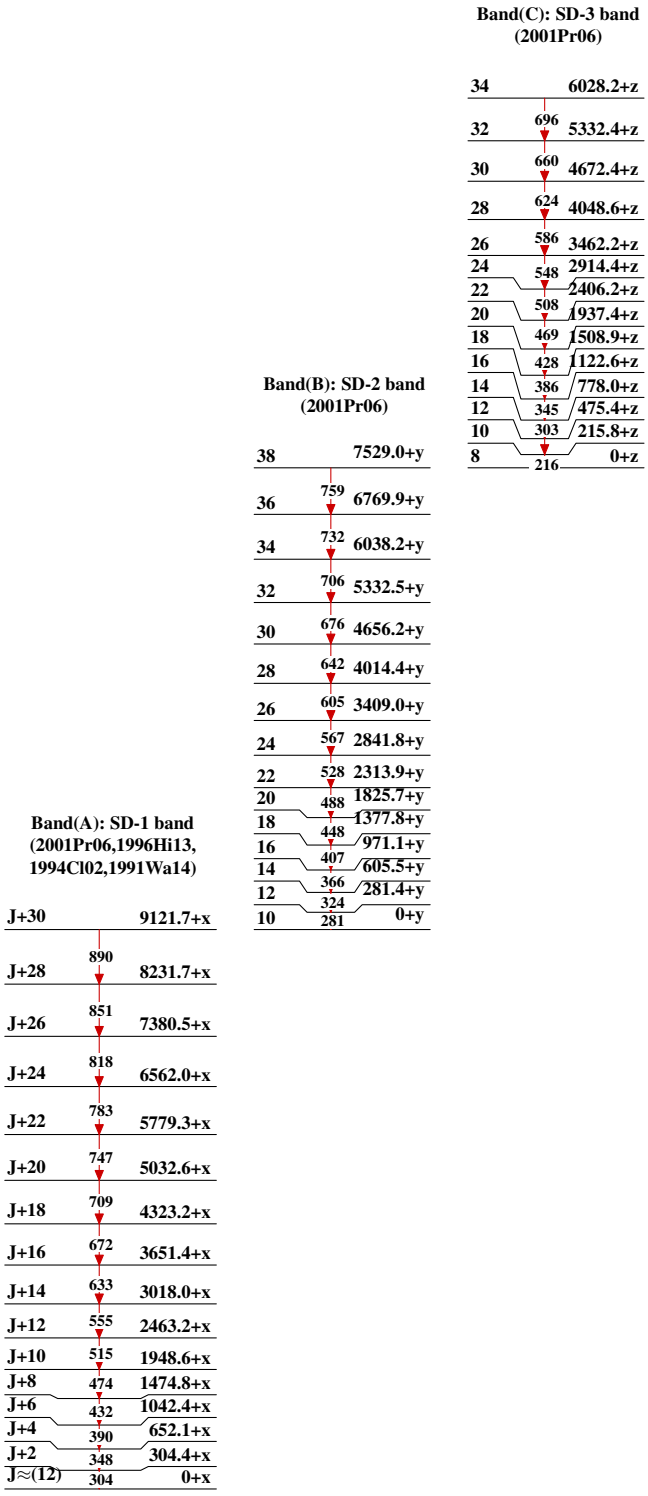
(HI,xnγ):SD 2001Pr06,2004Re08

Level Scheme (continued)



$^{198}_{82}Pb_{116}$

(HI,xnγ):SD 2001Pr06,2004Re08



$^{198}_{82}Pb_{116}$