(HI,xnγ):SD 1995La21,1995Ba26,2003Le08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 125, 201 (2015)	31-Dec-2014

2003Le08: ^{58}Ni(^{29}Si,4pγ), E(^{29}Si)=130 MeV. Measured Eγ, Iγ, γγγ, pγ coin, lifetimes by DSAM using GAMMASPHERE array with 100 Compton-suppressed HPGe detectors and MICROBALL particle array of CsI(Tl) detectors. Deduced SD band and quadrupole moment.

1995La21, 1999Le56: ^{58}Ni(^{29}Si,4pγ), E(^{29}Si)=128 MeV. Measured Eγ, Iγ, γγγ, pγ coin using Gammasphere and Microball array. The assignment of the SD band to ^{83}Sr is confirmed. 1995La21 give many additional normal deformed states (extended to J=59/2) which are given in the ^{58}Ni(^{29}Si,4pγ) dataset. Data of 1995La21 reanalyzed by 1997De51 to deduce lifetimes and Q(intrinsic). 1999Le56 also deduced lifetimes by the Doppler Shift Attenuation Method and Q(intrinsic).

1995Ba26: ^{56}Fe(^{30}Si,2pnγ), E(^{30}Si)=128 MeV. Measured Eγ, γγ; EUROGAM array. Deduced SD band, tentatively assigned to ^{83}Sr on the basis of observation of several γ rays in γγ spectra which belong to normal deformed bands in ^{83}Sr. But according to the authors, assignment to ^{83}Y or ^{80}Rb cannot be ruled out.

Additional information 1.

^{83}Sr Levels

E(level)	J^π	Comments
x†	J≈(41/2)	J^π: ≈(41/2) estimated (1995Ba26,1995La21,2003Le08) (within one unit of spin) from depopulation into the highest spin states ($45/2^+$,$39/2^-$) of normal-deformed bands in ^{83}Sr (1995La21,1992WiZU). E(level): x= 13.0 MeV *15* (1995La21).
1306.0+x† *10*	J+2	
2767.0+x† *15*	J+4	
4380.0+x† *18*	J+6	
6142.1+x† *20*	J+8	
8054.1+x† *23*	J+10	
10114.1+x† *25*	J+12	
12319+x† *3*	J+14	
14666+x† *3*	J+16	
17157+x† *3*	J+18	
19803+x?† *3*	J+20	

† Band(A): SD band (2003Le08,1995Ba26,1995La21). Q(transition)=3.60 *+20−18* (2003Le08), 3.5 *+8−6* (1997De51, reanalyzed data of 1995La21). Configuration=$\nu5^1\pi5^0$ (2003Le08); $\nu5^3\pi5^1$; π=+, α=+1/2; β_2≈0.57, γ≈0° (1995La21, from experimental values of moments of inertia). Percent population=1.36 (2003Le08), 1.4 *5* (1995Ba26).

γ(^{83}Sr)

E_γ†	E_i(level)	J_i^π	E_f	J_f^π	Comments
1306 *1*	1306.0+x	J+2	x	J≈(41/2)	E_γ: other: 1303 *2* (1995Ba26).
1461 *1*	2767.0+x	J+4	1306.0+x	J+2	
1613 *1*	4380.0+x	J+6	2767.0+x	J+4	
1762 *1*	6142.1+x	J+8	4380.0+x	J+6	E_γ: other: 1764 (1995La21).
1912 *1*	8054.1+x	J+10	6142.1+x	J+8	
2060 *1*	10114.1+x	J+12	8054.1+x	J+10	
2205 *1*	12319+x	J+14	10114.1+x	J+12	E_γ: other: 2203 (1995La21).
2347 *1*	14666+x	J+16	12319+x	J+14	
2491 *1*	17157+x	J+18	14666+x	J+16	E_γ: other: 2489 (1995La21).

Continued on next page (footnotes at end of table)

(HI,xnγ):SD 1995La21,1995Ba26,2003Le08 (continued)

γ(^{83}Sr) (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
2646[‡]	19803+x?	J+20	17157+x	J+18	E_γ: from 1995La21. Other: 2641 *2* (1995Ba26). γ not reported by 2003Le08.

[†] From 2003Le08, unless otherwise stated. Corresponding values from 1995La21 and 1995Ba26 are in general agreement.
[‡] Placement of transition in the level scheme is uncertain.

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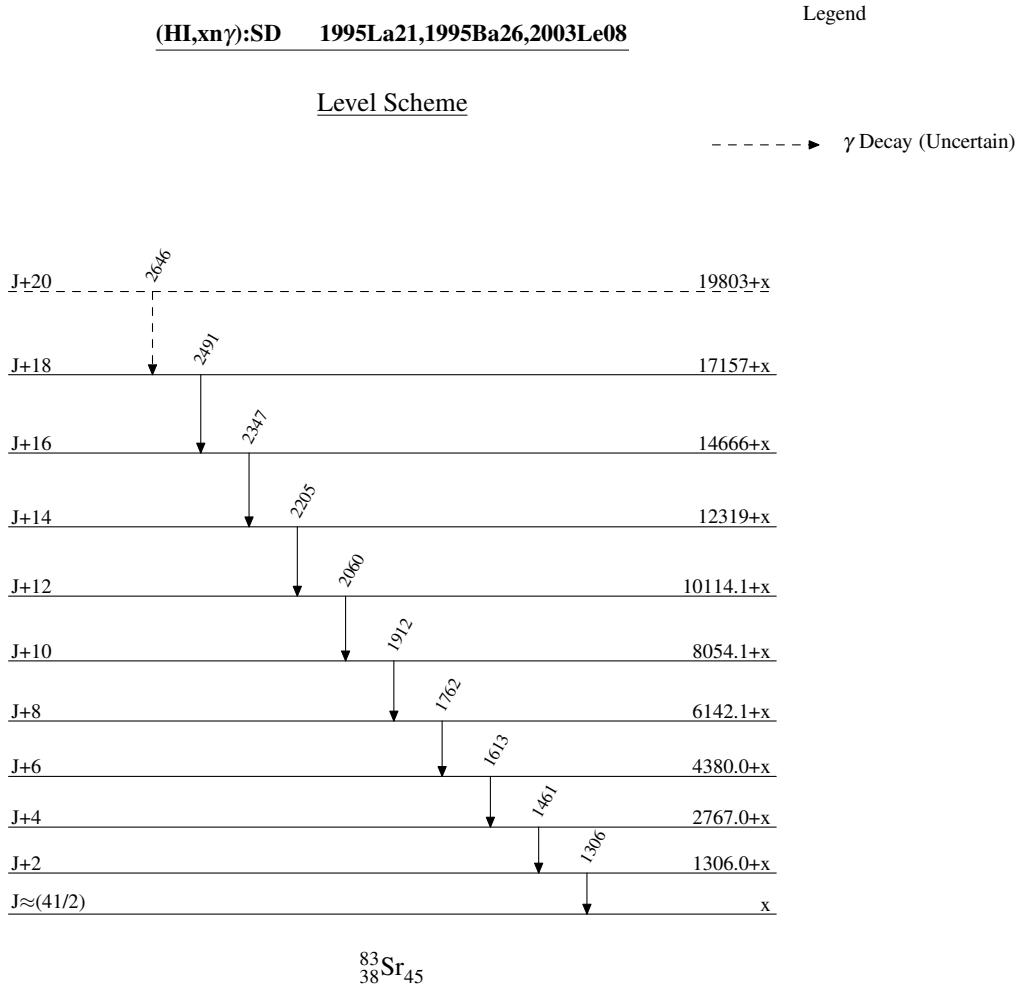
Level Scheme



$^{83}_{38}Sr_{45}$

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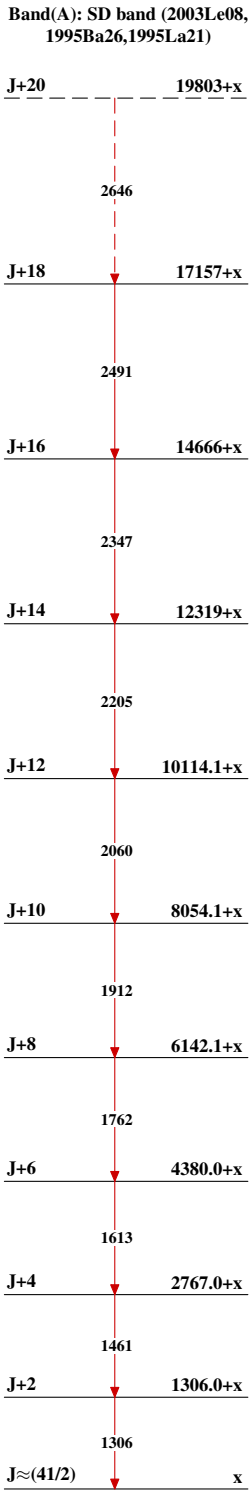

$^{83}_{38}Sr_{45}$