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^{58}Ni(^{29}Si,3pγ):SD   **2003Le08**

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<div align="center">History</div>

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	N. Nica and M. Bostan	NDS 110,2815 (2009)	30-Sep-2009

2003Le08: ^{58}Ni(^{29}Si,3pγ) E=130 MeV. Measured Eγ, Iγ, $\gamma\gamma$, lifetimes by DSAM using Gammasphere array with 100 Compton-suppressed HPGe detectors combined with Microball, a 95-element CSI(Tl) 4π charged-particle detector array. Deduced superdeformed structures and associated transition quadrupole moments.

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^{84}Y Levels

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E(level)	J$^{\pi\,\dagger}$	E(level)	J$^{\pi\,\dagger}$	E(level)	J$^{\pi\,\dagger}$
z‡	J≈(17)	15870+z‡ 3	J+16	v$^{@}$	J2≈(19)
1460.0+z‡ 10	J+2	u$^{\#}$	J1≈(19)	1880.0+v$^{@}$ 10	J2+2
3068.0+z‡ 15	J+4	1810.0+u$^{\#}$ 10	J1+2	3918.1+v$^{@}$ 15	J2+4
4831.0+z‡ 18	J+6	3769.0+u$^{\#}$ 15	J1+4	6115.1+v$^{@}$ 18	J2+6
6743.1+z‡ 20	J+8	5880.1+u$^{\#}$ 18	J1+6	8465.1+v$^{@}$ 20	J2+8
8802.1+z‡ 23	J+10	8144.1+u$^{\#}$ 20	J1+8	10973.2+v$^{@}$ 23	J2+10
11010.1+z‡ 25	J+12	10556.1+u$^{\#}$ 23	J1+10		
13364+z‡ 3	J+14	13118.2+u$^{\#}$ 25	J1+12		

† Estimated from observed feeding into known spin levels in the normal-deformed region; and checked by a fitting of measured dynamic moments of inertia as a function of rotational frequencies (2003Le08).

‡ Band(A): SD-1 band (2003Le08). Percent population=3.02. Q(transition)=3.6 +5−9 (2003Le08). Configuration=$\nu 5^1 \pi 5^0$; non-intruder orbitals: π(f$_{5/2}$,p$_{3/2}$(1/2[310])). This band is isospectral with SD band in ^{83}Sr.

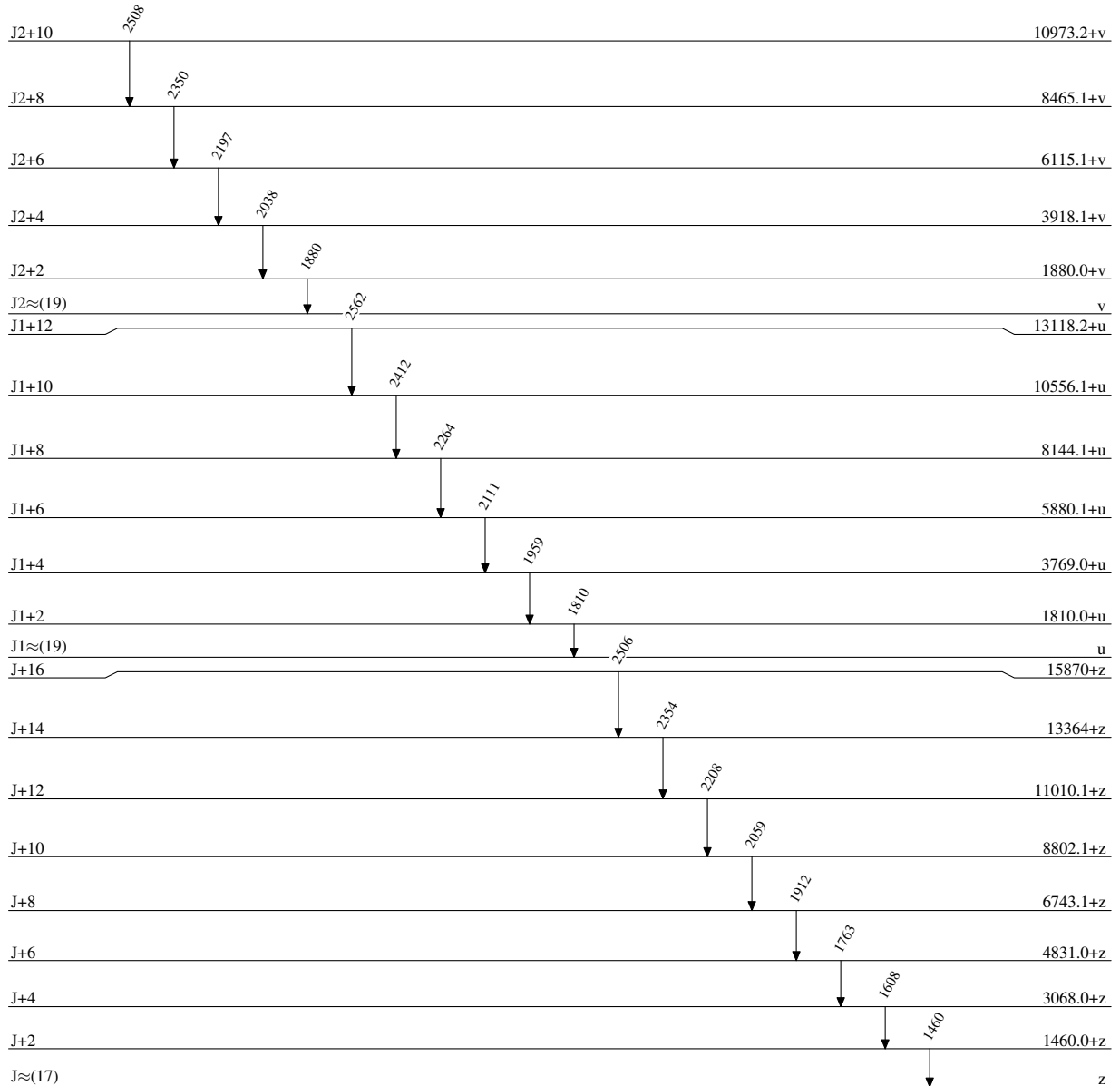$^{\#}$ Band(B): SD-2 band (2003Le08). Percent population=2.72.

$^{@}$ Band(C): SD-3 band (2003Le08). Percent population=0.76.

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γ(^{84}Y)

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E$_\gamma$	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	E$_\gamma$	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
1460 *1*	1460.0+z	J+2	z	J≈(17)	2197 *1*	6115.1+v	J2+6	3918.1+v	J2+4
1608 *1*	3068.0+z	J+4	1460.0+z	J+2	2208 *1*	11010.1+z	J+12	8802.1+z	J+10
1763 *1*	4831.0+z	J+6	3068.0+z	J+4	2264 *1*	8144.1+u	J1+8	5880.1+u	J1+6
1810 *1*	1810.0+u	J1+2	u	J1≈(19)	2350 *1*	8465.1+v	J2+8	6115.1+v	J2+6
1880 *1*	1880.0+v	J2+2	v	J2≈(19)	2354 *1*	13364+z	J+14	11010.1+z	J+12
1912 *1*	6743.1+z	J+8	4831.0+z	J+6	2412 *1*	10556.1+u	J1+10	8144.1+u	J1+8
1959 *1*	3769.0+u	J1+4	1810.0+u	J1+2	2506 *1*	15870+z	J+16	13364+z	J+14
2038 *1*	3918.1+v	J2+4	1880.0+v	J2+2	2508 *1*	10973.2+v	J2+10	8465.1+v	J2+8
2059 *1*	8802.1+z	J+10	6743.1+z	J+8	2562 *1*	13118.2+u	J1+12	10556.1+u	J1+10
2111 *1*	5880.1+u	J1+6	3769.0+u	J1+4					

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Level Scheme

J2+10	2508		10973.2+v
J2+8	2350		8465.1+v
J2+6	2197		6115.1+v
J2+4	2038		3918.1+v
J2+2	1880		1880.0+v
J2≈(19)	2562		v
J1+12			13118.2+u
J1+10	2412		10556.1+u
J1+8	2264		8144.1+u
J1+6	2111		5880.1+u
J1+4	1959		3769.0+u
J1+2	1810		1810.0+u
J1≈(19)	2506		u
J+16			15870+z
J+14	2354		13364+z
J+12	2208		11010.1+z
J+10	2059		8802.1+z
J+8	1912		6743.1+z
J+6	1763		4831.0+z
J+4	1608		3068.0+z
J+2	1460		1460.0+z
J≈(17)			z

$^{84}_{39}$Y$_{45}$

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Band(C): SD-3 band (2003Le08)

J2+10	10973.2+v

2508

J2+8	8465.1+v

2350

J2+6	6115.1+v

2197

J2+4	3918.1+v

2038

J2+2	1880.0+v

1880

J2≈(19)	v

Band(B): SD-2 band (2003Le08)

J1+12	13118.2+u

2562

J1+10	10556.1+u

2412

J1+8	8144.1+u

2264

J1+6	5880.1+u

2111

J1+4	3769.0+u

1959

J1+2	1810.0+u

1810

J1≈(19)	u

Band(A): SD-1 band (2003Le08)

J+16	15870+z

2506

J+14	13364+z

2354

J+12	11010.1+z

2208

J+10	8802.1+z

2059

J+8	6743.1+z

1912

J+6	4831.0+z

1763

J+4	3068.0+z

1608

J+2	1460.0+z

1460

J≈(17)	z

$^{84}_{39}$Y$_{45}$