^{94}Zr(^{48}Ca,3nγ) 2000Pe01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain	NDS 138, 1 (2016)	15-Oct-2016

2000Pe01: E=195 MeV, measured Eγ, $\gamma\gamma$, DCO, Iγ using the 8π array of 20 Compton suppressed HPGe detectors and an inner ball of 71 BGO scintillators.

The two bands observed by 2000Pe01 decay towards high-spin states which were not previously observed and are not discussed in 2000Pe01. Earlier high-spin level scheme from 1980Mu10 is known only up to 4037 level of possible J^π=(31/2).

^{139}Nd Levels

E(level)	J^π	Comments
y†	(49/2,53/2)	Additional information 1. E(level),J^π: this level decays through a ΔJ=1, 388γ to the (47/2) level of a band similar to Band #3 and #4 in ^{137}Nd (See 1997Pe06). J=49/2 assigned by 2000Pe01. A spin value larger by 2 may be possible if there are unobserved transitions.
583.0+y† *10*		
1325.0+y† *15*		
2219.0+y† *18*		
3281.0+y† *20*		
4530.0+y† *23*		
5977.0+y† *25*		
z‡	J≥49/2	Additional information 2. E(level): this level decays through a 1122γ-1033γ cascade of ΔJ=2, E2 transitions to a dipole band, similar to Band #7 in ^{137}Nd (See 1997Pe06).
572.0+z‡ *10*		
1310.0+z‡ *15*		
2273.0+z‡ *18*		
3460.0+z‡ *20*		
4877.0+z‡ *23*		
6508.0+z‡ *25*		

† Band(A): Triaxial band #1. Population intensity=15% *5*.

‡ Band(B): triaxial band #2.

γ(^{139}Nd)

Eγ	E$_i$(level)	E$_f$	J^π_f	Eγ	E$_i$(level)	E$_f$
572	572.0+z	y	(49/2,53/2)	1062	3281.0+y	2219.0+y
583	583.0+y	y	(49/2,53/2)	1187	3460.0+z	2273.0+z
738	1310.0+z	572.0+z		1249	4530.0+y	3281.0+y
742	1325.0+y	583.0+y		1417	4877.0+z	3460.0+z
894	2219.0+y	1325.0+y		1447	5977.0+y	4530.0+y
963	2273.0+z	1310.0+z		1631	6508.0+z	4877.0+z

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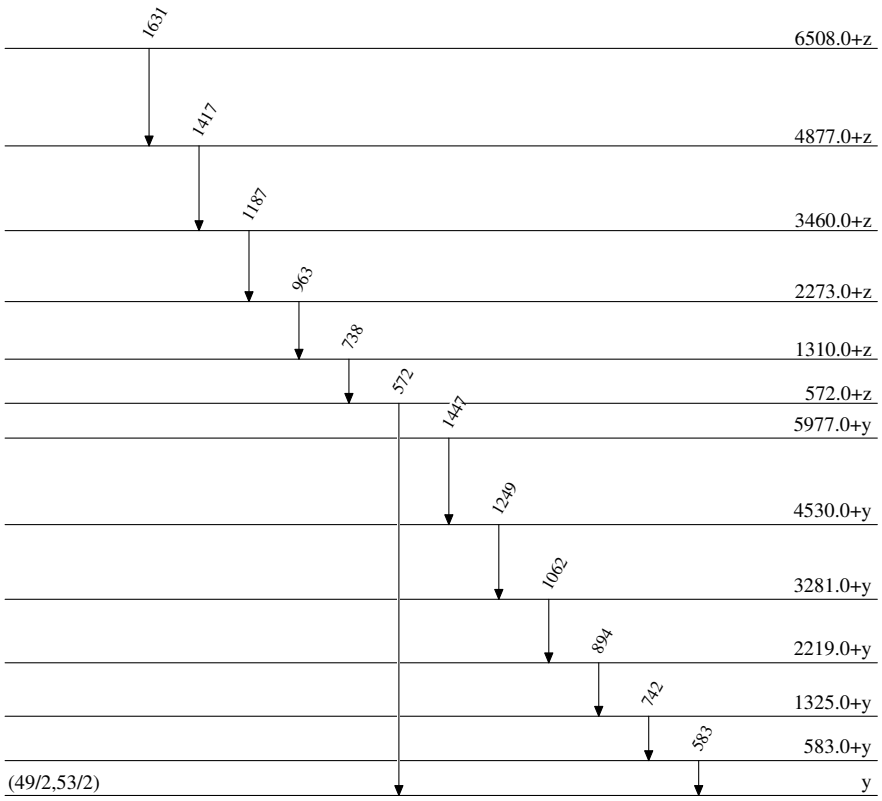
Level Scheme



$^{139}_{60}Nd_{79}$

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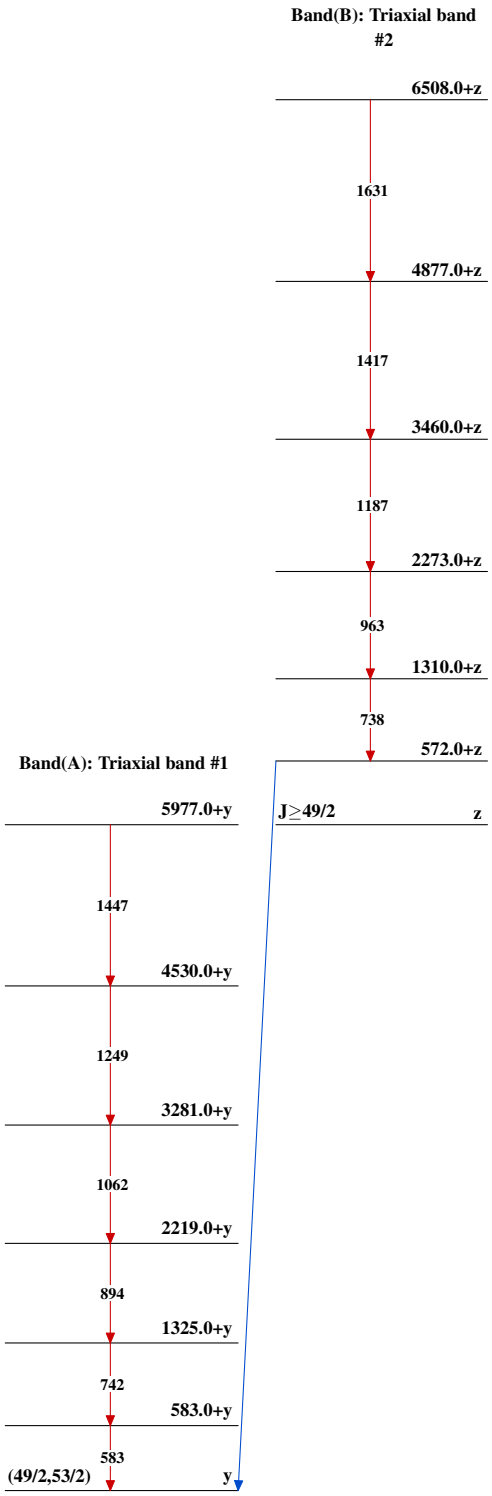

$^{139}_{60}Nd_{79}$