^{238}U(^{70}Zn,Xγ) 2012Re11

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 196,17 (2024)	30-Sep-2023

Adapted from the XUNDL dataset for 2012Re11 compiled by Thiagalingam and B. Singh (McMaster) on June 14, 2012.

2012Re11: E=460 MeV ^{70}Zn beam was delivered by the Laboratori Nazionali di Legnaro (LNL) Tandem-ALPI accelerator complex. Target was 400 μg/cm^2 ^{238}U. γ rays were detected with the CLARA array consisting of 22 Compton-suppressed Ge detectors and projectile-like recoils were detected with the magnetic spectrometer PRISMA. Measured Eγ, Iγ, $\gamma(\theta)$, $\gamma\gamma$-coin, projectile-γ-coin. Deduced levels, configurations. Comparison with large-scale shell-model calculations.

^{63}Co Levels

E(level)[†]	J$^\pi$[‡]
0.0	7/2$^-$
1383.2 *4*	(9/2$^-$)
1673.7 *4*	11/2$^-$
2538.7 *6*	(11/2$^-$)
3033.8 *7*	(13/2$^-$)
3204.1[#] *9*	(15/2$^-$)
3225.0 *7*	(15/2$^-$)
3581.2 *8*	(17/2$^-$)
3611.2[#] *9*	(17/2$^-$)
4168.4 *9*	(19/2$^-$)

[†] From Eγ data.
[‡] From Adopted Levels.
[#] Level from Adopted Levels, as a result of placement of 407.1γ.

γ(^{63}Co)

For R_{ASYM} values under comments, expected values are ≈0.8 for a stretched ΔJ=1 (dipole) transition and ≈1.2 or larger for a stretched ΔJ=2 (quadrupole) transition (2012Re11).

E$_\gamma$[†]	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	Comments
191.2 *2*	33 *2*	3225.0	(15/2$^-$)	3033.8	(13/2$^-$)	(D)	R_{ASYM}=0.98 *18*.
[x]214.3 *16*	5 *3*						
290.3 *5*	9 *2*	1673.7	11/2$^-$	1383.2	(9/2$^-$)		
356.2 *3*	31 *3*	3581.2	(17/2$^-$)	3225.0	(15/2$^-$)		
407.1 *3*	29 *4*	3611.2	(17/2$^-$)	3204.1	(15/2$^-$)	(D)	R_{ASYM}=0.97 *28*. γ placement from Adopted Gammas; unplaced in 2012Re11.
495.1 *4*	41 *4*	3033.8	(13/2$^-$)	2538.7	(11/2$^-$)		
587.2 *4*	32 *9*	4168.4	(19/2$^-$)	3581.2	(17/2$^-$)	(D)	R_{ASYM}=0.97 *28*.
1155.5 *4*	50 *5*	2538.7	(11/2$^-$)	1383.2	(9/2$^-$)		
[x]1249.8 *12*	53 *8*						
1383.0 *4*	100 *7*	1383.2	(9/2$^-$)	0.0	7/2$^-$	(D)	R_{ASYM}=1.02 *26*.
1673.9 *4*	100 *8*	1673.7	11/2$^-$	0.0	7/2$^-$	Q	R_{ASYM}=1.43 *23*.

[†] From 2012Re11.
[‡] Deduced by the evaluator based on measured R_{ASYM} in 2012Re11 and authors′ statement about expected R_{ASYM} values.
[x] γ ray not placed in level scheme.

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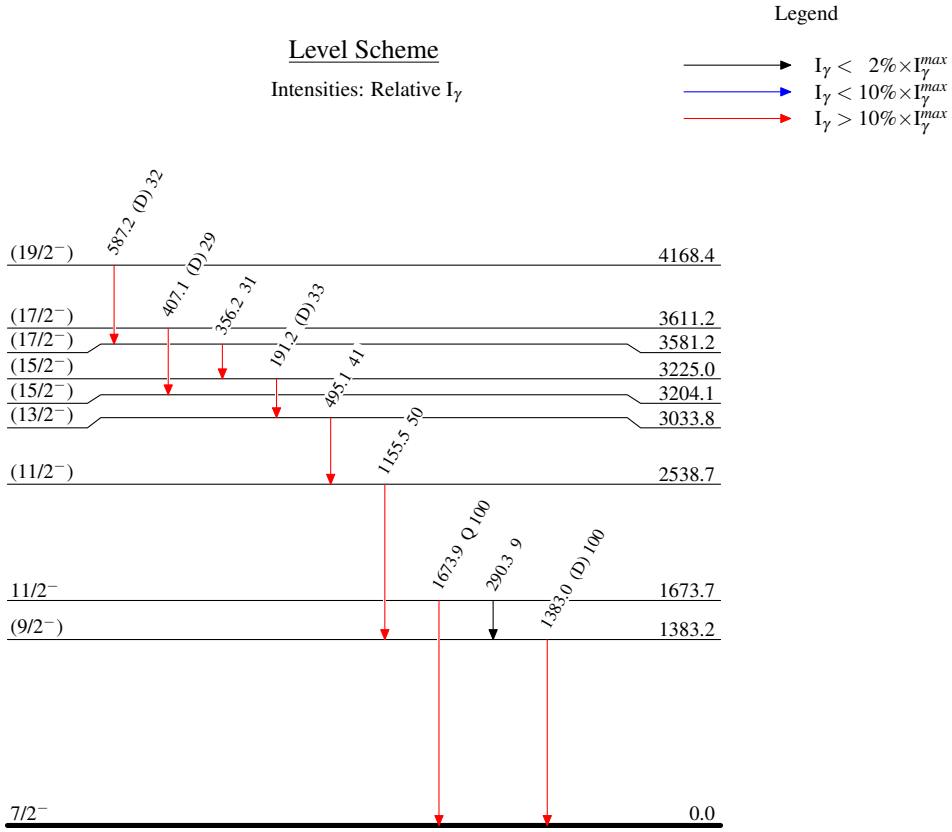
Level Scheme

Intensities: Relative I_γ



$^{63}_{27}Co_{36}$