^{1}H(^{82}Ga,2pγ) 2017Sh42

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 199,271 (2025)	1-Sep-2024

Adopted/Edited XUNDL dataset compiled by B. Singh (McMaster); Dec 7, 2017.

2017Sh42: ≈250 MeV/nucleon secondary ^{82}Ga beam was obtained from ^{9}Be(^{238}U,F), E=345 MeV/nucleon primary reaction, and using BigRIPS separator and ZeroDegree spectrometer for selection of ions based on Bρ-ΔE-Bρ method at RIBF-RIKEN facility. For secondary reaction, 102-mm thick liquid hydrogen target was used which was surrounded by a time projection chamber (TPC). Measured Eγ, Iγ, $\gamma\gamma$-coin, outgoing protons using DALI2 array of 186 NaI(Tl) detectors for γ radiation and MINOS device for protons. The γ spectra were Doppler corrected using the reaction information from the MINOS system. Comparison with shell-model calculations.

The level scheme is tentative.

^{81}Zn Levels

E(level)[†]	Comments
0.0	Possible configuration: $\pi f^2_{5/2\ 0+}\otimes\nu d_{5/2}$ (2017Sh42), suggesting 5/2$^+$ for the ground state, as has been proposed earlier also.
938?[‡] *13*	
1235?[‡] *17*	

[†] From Eγ.

[‡] Possible configuration: $\pi f^2_{5/2\ 2+}\otimes\nu d_{5/2}$ (2017Sh42).

γ(^{81}Zn)

E$_\gamma$[†]	I$_\gamma$[#]	E$_i$(level)	E$_f$	Comments
938[‡] *13*	13 *3*	938?	0.0	
1235[‡] *17*	6 *2*	1235?	0.0	E$_\gamma$: tentative γ ray.

[†] From Doppler-corrected γ-spectra using reaction information from the MINOS system, and simulation of response of DALI2 array by GEANT4.

[‡] The 938 and 1235 γ rays were not observed in $\gamma\gamma$-coin spectra.

[#] In percent of detected (p,2p) reactions.

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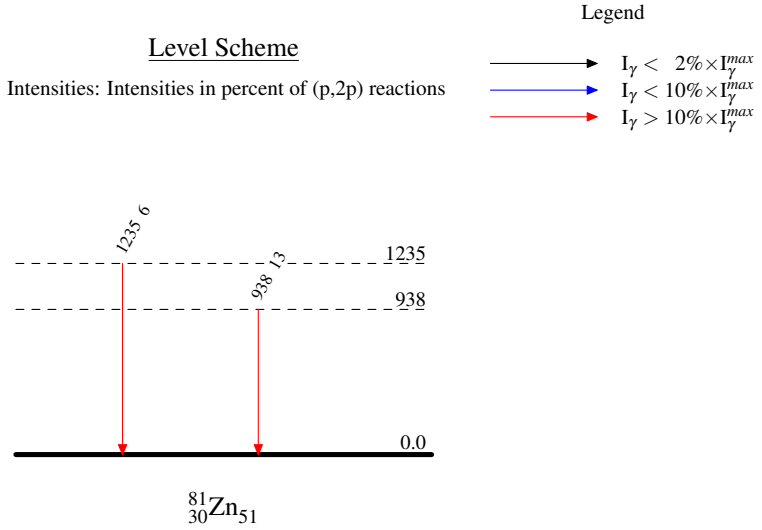
Level Scheme

Intensities: Intensities in percent of (p,2p) reactions



$^{81}_{30}Zn_{51}$