^{230}Th(α,t) 1975Er01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jagdish K. Tuli, and Edgardo Browne	NDS 185, 560 (2022)	31-Aug-2022

1975Er01: E(α)=29 MeV. Measured scattered tritons particles at θ=80°, with a few spectra recorded at 45° using Enge split-pole magnetic spectrograph at the University of Minnesota tandem Van de Graaff accelerator. FWHM=18-25 MeV. Authors compared experimental spectroscopic factors with theory based on DWBA calculations.

^{231}Pa Levels

Listed dσ/dΩ data are at 80° with respect to the beam direction. Listed uncertainties are relative. To consider these cross sections as absolute values, additional 20% uncertainty should be added, as mentioned by 1975Er01.

E(level)	J$^{\pi}$[†]	S	Comments
0[‡]	3/2$^-$	0.17 *2*	dσ/dΩ=13.2 μb/sr *11*.
12[‡] *4*	1/2$^-$	0.17 *3*	dσ/dΩ=5.3 μb/sr *10*.
59[‡] *1*	7/2$^-$	0.15 *1*	dσ/dΩ=19.6 μb/sr *12*.
78[‡] *2*	5/2$^-$	0.085 *20*	dσ/dΩ=5.4 μb/sr *8*.
105[#] *3*	(7/2$^+$&3/2$^+$)		E(level): doublet. dσ/dΩ=4.7 μb/sr *9*.
117[#] *4*	(9/2$^+$)	0.072 *20*	dσ/dΩ=5.5 μb/sr *9*.
134[#] *5*	(11/2$^+$)	0.04 *2*	dσ/dΩ=1.2 μb/sr *6*. In the Adopted dataset, 11/2$^+$ member of the band is at 171.7 keV.
172[‡] *3*	(11/2$^-$)	0.063 *20*	dσ/dΩ=5.7 μb/sr *21*.
189[#] *1*	(13/2$^+$)	0.43 *4*	dσ/dΩ=41.8 μb/sr *40*.
214[@] *2*	7/2$^-$	0.081 *20*	dσ/dΩ=10.0 μb/sr *22*.
272[@] *1*	9/2$^-$	0.73 *5*	dσ/dΩ=24.3 μb/sr *15*.
287[a] *3*	(1/2$^+$)		dσ/dΩ=5.0 μb/sr *8*. In the Adopted dataset, 1/2$^+$ bandhead is at 273.7 keV.
316[a] *4*	(3/2$^+$&5/2$^+$)		dσ/dΩ=2.7 μb/sr *7*.
340[@] *3*	(11/2$^-$)	0.031 *10*	dσ/dΩ=2.8 μb/sr *8*.
385 *5*			dσ/dΩ=1.0 μb/sr *5*.
393 *2*			dσ/dΩ=7.5 μb/sr *20*.
442 *2*			dσ/dΩ=4.8 μb/sr *5*.
455 *2*			dσ/dΩ=2.4 μb/sr *5*.
507 *3*			dσ/dΩ=1.9 μb/sr *4*.
518 *3*			dσ/dΩ=0.8 μb/sr *4*.
575 *5*			dσ/dΩ=2.0 μb/sr *5*.
590 *5*			dσ/dΩ=2.0 μb/sr *5*.
604[&] *4*	(3/2$^-$)		dσ/dΩ=2.5 μb/sr *7*.
632[&] *3*	(5/2$^-$)		dσ/dΩ=3.0 μb/sr *8*.
676[&] *2*	(7/2$^-$)	0.24 *3*	dσ/dΩ=25.2 μb/sr *31*.
700 *3*			dσ/dΩ=4.0 μb/sr *16*.
750 *2*			dσ/dΩ=1.7 μb/sr *4*.
801 *3*	(11/2$^-$)		In Fig. 13 of 1975Er01, this level is listed with configuration of 3/2[521], but not discussed in the text. dσ/dΩ=4.1 μb/sr *5*.
815 *3*			dσ/dΩ=4.7 μb/sr *5*.

[†] As given in 1975Er01, based on DWBA analysis and rotational band assignments.
[‡] Band(A): π1/2[530].

Continued on next page (footnotes at end of table)

^{230}Th(α,t) 1975Er01 (continued)

^{231}Pa Levels (continued)

Band(B): π3/2[651].
@ Band(C): π5/2[523]. Assignment is π5/2[512] in the Adopted dataset.
& Band(D): π3/2[521].
a Band(E): π1/2[400]. Assignment is π1/2[400]+π1/2[660] in the Adopted dataset.

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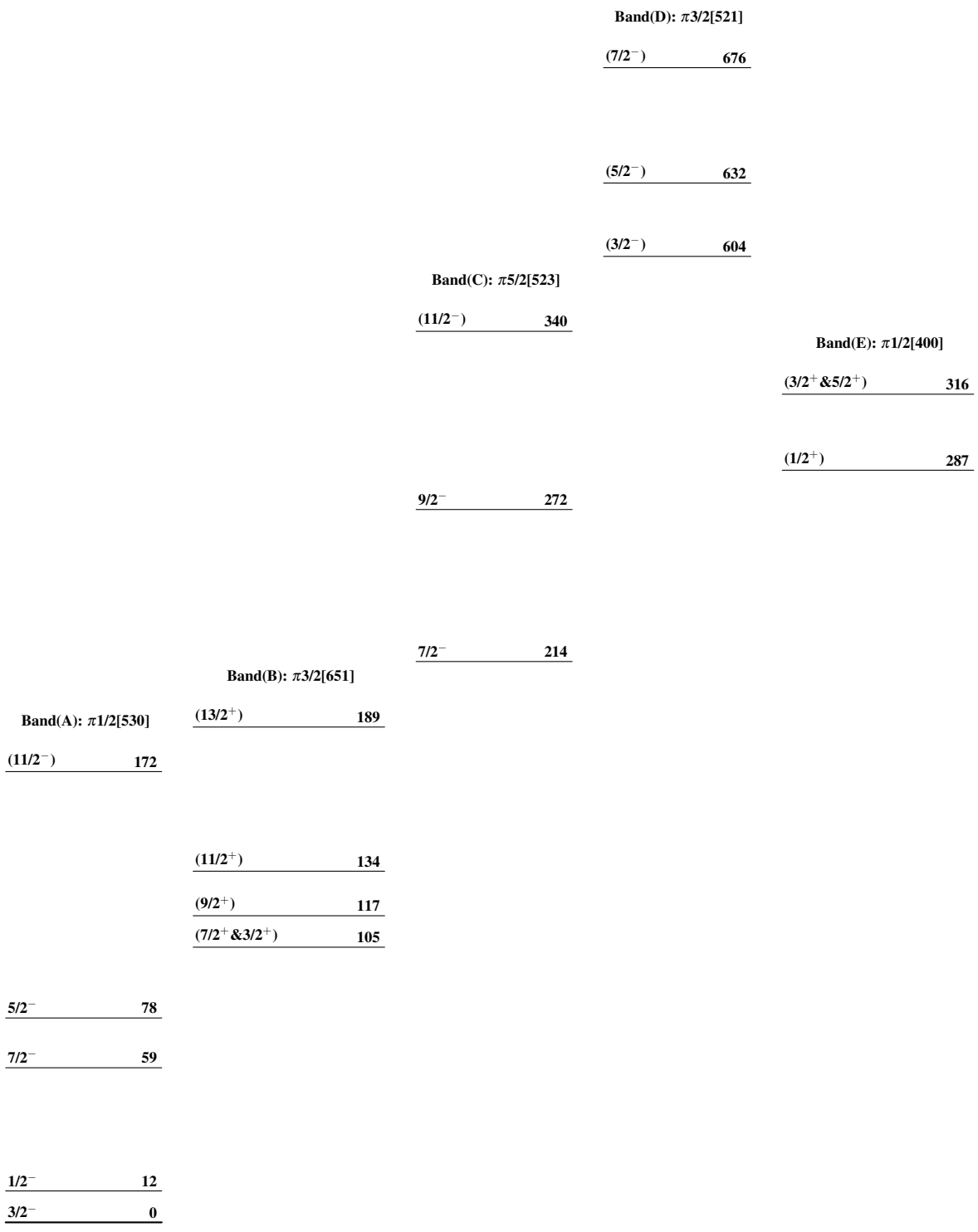

$^{231}_{91}Pa_{140}$