^{62}Ni(t,p)   1971Da16

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 178,41 (2021).	12-Nov-2021

1971Da16: E=12.05 MeV triton beam from the Aldermaston tandem. Target was 99.05% enriched ^{62}Ni. Reaction products were momentum-analyzed with a multiangle magnetic spectrograph and emulsion plates. Measured E(p), $\sigma(\theta_{c.m.}$ from $\approx5°$ to $\approx150°$). Deduced levels, L-transfers from DWBA analysis.

Theoretical calculation: 1975Dz05, 1973Ga05.

^{64}Ni Levels

E(level)[†]	L[‡]	σ(rel)[#]	E(level)[†]	L[‡]	σ(rel)[#]	E(level)[†]	L[‡]	σ(rel)[#]
0	0	100	3846 10		3.3 2	4886 10	2	3.3 3
1345 10	2	7.8 4	3958 10			4958 10		2.2 4
2270 10	(2)[a]	≈0.5[b]	4080 10		4.0 4	4985 10	(2)	5.0 10
2605 10	4	1.2 3	4211 10	(0)	1.8 2	5026 10		
2860 10	0	2.6 1	4239 10			5085 10		
2967 10	(2)[&]	1.5 2	4263 10			5146 10		
3020 10	(0)	4.6 2	4344 10		1.4 2	5164 10		
3158[@] 10		3.6 2	4491 10			5209 10	(4)	7.9 8
3270 10	2	7.9 4	4524 10			5273 10		
3390 10			4556 10		4.9 10	5358 10		
3551 10	3	12 1	4620 10			5408 10		9.2 14
3641 10			4692 10			5535 10		
3746 10			4732 10			5614 10	(2)[&]	9.1 18
3795 10			4750 10			5660 10		

[†] From 1971Da16.
[‡] From comparison of $\sigma(\theta)$ data to those for levels of known J^π such as g.s. and 1345, 2$^+$.
[#] At 12 angles forward of 90°.
[@] Doublet.
[&] $\sigma(\theta)$ indicates mixed L-transfer.
[a] $\sigma(\theta)$ for this weakly populated level not typical of L=0 as suggested in (p,p′). It appears to be of L=2 shape but with less depth at 0° as compared to that for known L=2 at 1346, thus indicating that there may be some L=0 contribution to this group. The L=2 shape could then be due to an impurity contributing to forward angle data.
[b] Authors give >0.5.