^{72}Ge(p,γ),(p,p),(p,p'γ) IAS   1972Be13,1969Be33

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 158, 1 (2019)	16-May-2019

1972Be13: ^{72}Ge(p,p'ce) E=3.3-4.7 MeV, σ(E(p)).

1969Be33: ^{72}Ge(p,p) E=3.3-3.8 and 4.3-4.5 MeV, σ(E(p),θ).

1979Gi03,1972Gi08: ^{72}Ge(p,p'), crystal blocking, $T_{1/2}$ compound nucleus, σ(E(p),θ).

For additional possible IAS, see ^{72}Ge(^{3}He,d).

Others: 1969MoZT, 1973HaYQ, 1982We03.

For (p,p') resonance parameters deduced from S(d,p), see 1972Be13.

Data are from 1972Be13, except where noted. IAS identification is given only for levels with known L values.

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1975Sc44,1978Kl05: 72Ge(p,γ)    E=3.2-5.1 MeV, σ(E(p)),  observed
analog to antianalog γ-transitions
analog state     Jπ     antianalog states   M1 transition strength
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  S(p)+3375      9/2+       428+1850            4.7×10⁻³     W.u.
  S(p)+3375      5/2+       510              < 1.1×10⁻³     W.u.
  S(p)+3865      5/2+       510              < 2.0×10⁻³     W.u.
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^{73}As Levels

E(analog)=E(level)−8994+13, corresponding analog energy relative to g.s. in ^{73}Ge.

E(level)[†]	J$^{\pi}$[#]	L[@]	σ(p,p)(mb) S\$From 1972Be13	Comments
8994[a]	5/2$^+$	2	0.084	E(level): IAS of 13 level in ^{73}Ge. E(p)(lab)=3374. L: any L=4 component corresponding to IAS of ^{73}Ge(g.s.) is obscured by the L=2 component.
9045			0.3	E(analog)=64; IAS of 65 level in ^{73}Ge. E(p)(lab)=3426.
9346	3/2$^-$	1	0.456	E(analog)=365; IAS of 364 level in ^{73}Ge. E(p)(lab)=3731.
9375			0.24	E(analog)=394. E(p)(lab)=3761.
9489[a]			0.174	E(level): E(analog)=508. E(p)(lab)=3876.
9543			0.66	E(analog)=562. E(p)(lab)=3931.
9645			0.09	E(analog)=664. E(p)(lab)=4034.
9696			0.09	E(analog)=715. E(p)(lab)=4086.
9774			0.624	E(analog)=793. E(p)(lab)=4166.
9829			0.57	E(analog)=848. E(p)(lab)=4221.
9868			0.816	E(analog)=887. E(p)(lab)=4261.
9898[a]				E(analog)=917. E(p)(lab)=4291.
10021[a]	3/2$^-$	1		E(analog)=1040; IAS of 1043 in ^{73}Ge. E(p)(lab)=4416.

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^{72}Ge(p,γ),(p,p),(p,p$'\gamma$) IAS   1972Be13,1969Be33 (continued)

^{73}As Levels (continued)

E(level)[†]	J$^{\pi}$[#]	L[@]	Comments
10095			E(analog)=1114.
			E(p)(lab)=4491.
10144			E(analog)=1163.
			E(p)(lab)=4541.
10213			E(analog)=1232.
			E(p)(lab)=4611.
10272			E(analog)=1291.
			E(p)(lab)=4671.
10588[‡]	1/2$^+$	0[&]	E(analog)=1607, IAS of 1599 in ^{73}Ge.
10617[‡a]	5/2$^+$	2[&]	E(analog)=1636, IAS of 1623 in ^{73}Ge.
			J$^{\pi}$: from asymmetry in (pol p,p) (1979Gi03).
10686[‡]	1/2$^+$	0[&]	E(analog)=1705, IAS of 1742 in ^{73}Ge.

[†] From S(p)+E(p)(c.m.), where S(p)(^{73}As)=5656 *4* (2017Wa10), unless otherwise noted.
[‡] From 1979Gi03.
[#] From L value and J$^{\pi}$ of corresponding ^{73}Ge state.
[@] From shape of σ(E(p),θ) (1969Be33), except as noted.
[&] From fitting elastic scattering excit curves with the three IAR.
[a] Observed by 1978Kl05 also.