

${}^{91}\text{Zr}(\text{p},\text{p}')$ 1976BI11

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 114, 1293 (2013)	1-Sep-2013

$J^\pi(\text{target})=5/2^+$.

Other measurements: 1969Du05 (E(p)=12.0 MeV, $\theta=30^\circ$ to 90° , FWHM=9-15 keV); 1969Aw01 (E(p)=14.52 MeV, $\theta(\text{c.m.})\approx 40^\circ-160^\circ$, FWHM=50-60 keV); 1969BI06 (E(p)=18.7 MeV, $\theta(\text{c.m.})\approx 30^\circ-105^\circ$, FWHM=70-80 keV).

1976BI11: E=13.95 MeV and 20.47 MeV. 89.31% ${}^{91}\text{Zr}$ target. Magnetic spectrometer with semi, FWHM=6.5 keV /212 keV. $\theta=15^\circ$ to 120° .

2012Ka25: E=14.8 MeV; measured $\sigma(\theta)$, $\theta(\text{lab})\approx 30^\circ$ to 160° for elastic scattering only.

 ${}^{91}\text{Zr}$ Levels

E(level) [†]	L [‡]	S [#]	E(level) [†]	L [‡]	S [#]	E(level) [†]
0			3053 8			3829 8
1205 3	(2)		3082 8	4	0.052 ^{&}	3847 8
1468 3	2	0.09	3108 8	2	0.11	3884 8
1884 3	2	0.30	3143 8			3893 8
2041 3			3170 8			3903 8
2131 3	2	0.22	3235 8	(2)	0.047	3922 8
2170 3	3	1.15	3262 8			3944 8
2189 3	5	0.082	3283 8			3959 8
2201 3			3290 8			3980 8
2261 3	5	0.051	3309 8			4003 8
2289 3	5	0.105	3317 8			4027 8
2322 3	5	0.165	3335 8			4035 8
2358 5	3	0.18	3356 8			4065 8
2369 5	(3+5)		3375 8			4111 8
2397 5	3	0.22	3410 8			4145 8
2534 5	(2)	0.045	3452 8	3		4161 8
2557 5			3466 8			4187 8
2578 5	3	0.20	3474 8			4230 8
2641 5	3	0.15	3489 8			4245 8
2695 5	3	0.44	3553 8			4265 8
2766 5	5	0.09	3570 8			4273 8
2777 5	3	0.082	3597 8			4291 8
2813 5	3	0.55	3635 8			4323 8
2832 5	3	0.32	3648 8	(5)		4335 8
2859 5	4	0.077	3660 8			4357 8
2874 5			3683 8			4376 8
2905 5			3704 8	2		4395 8
2915 5			3725 8			4433 8
2931 [@] 5			3749 8			4450 8
3008 8	3	0.040	3775 8			4459 8
3032 8	3	0.39	3817 8			

[†] From 20.5-MeV experiment of 1976BI11, authors estimate that the uncertainties range from 3 keV for the lower energy levels to 8 keV for the levels at 4 MeV. Individual uncertainties assigned by the evaluator. Energies from 1969Du05 are systematically lower by 5-18 keV.

[‡] From DWBA.

[#] $100(2J+1)/((2J(\text{g.s.})+1)(2L+1)) (\beta_L)^2$ at 20.5 MeV obtained by DWBA. See 1976BI11 for values derived from E(p)=14 MeV data.

[@] Probably a doublet.

[&] Corrected for contribution from the 3077 level in ${}^{90}\text{Zr}$.