^{92}Zr(α,α') 1986Si17

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 2187 (2012)	15-Sep-2012

Others: 1965Br09, 1966Bi05, 1969Bi03, 1974Ku22, 1980ToZS, 1982Co09, 1983Ko36, 1987Ry01, 1988Si17, 1995Lu01.

1965Br09: Eα=43 MeV; FWHM=400 keV; θ(lab)=21°−53°; DWBA; 6 levels.

1969Bi03: Eα=65 MeV; FWHM=200-250 keV; θ(c.m.)=7.5°−100°; DWBA; 3 levels. See also 1966Bi05 (5 levels).

1974Ku22: Eα=34.4 MeV; FWHM=70-120 keV; DWBA.

1980ToZS: Eα=64.7 MeV; FWHM=60-70 keV; QDD spectrograph. DWBA analysis of $\sigma(\theta)$; deduced L, β_L and %EWSR for twelve 3^- states or groups of states; observed additional 13 levels with $J^\pi=2^+$, 4^+, 5^- or 6^+.

1982Co09: Eα=104 MeV; FWHM=150-200 keV; θ(lab)=7°−54°; coupled channels analysis; 0, 934,1495 levels.

1983Ko36: Eα=21 MeV; FWHM=17-22 keV; θ(lab)=47°; 5 levels.

1986Si17: Eα=35.4 MeV; Q3d spectrograph, FWHM=25-30 keV; θ(c.m.)=15°−40°; DWBA analysis; observed 51 levels.

1987Ry01: Eα=35.4 MeV; θ(lab)=10°−50°; DWBA; 0,935,1847,2334 levels.

1988Si17: Eα=35.4 MeV; θ(c.m.)≈10°−90°; optical model; elastic only.

1995Lu01: Eα=35.4 MeV; FWHM=130 keV, θ(lab)=6°−46.5° (elastic), 8°−46.5° (inelastic); deformed optical model and folding model analyses; 0,935,2334 levels.

%EWSR from 1980ToZS is indicated below for levels associated by 1980ToZS with low energy octupole resonance; the weighted mean energy of this resonance is 6.3 MeV and the summed strength 18.6%. %EWSR=10.8 for 3^- 2334 level (1980ToZS).

^{92}Zr Levels

E(level)[†]	L[‡]	β_LR[#]	Comments
0.0			
935 *10*	2	0.74	
1495 *10*	4	0.32	
1847 *10*	2	0.29	
2053 *10*	2[@]	0.19	
2182 *10*	(2)	0.08	
2334 *10*	3	0.93	
2393 *10*	4	0.16	
2482 *10*	5	0.30	
2757[&]	3	0.14	
2823	2	0.13	
2869	4	0.26	
2963	(6)	0.14	
3055	2	0.16	
3187	4	0.19	
3248	4	0.17	
3273	2	0.17	
3345	5	0.19	
3382	3	0.13	
3452	3	0.35	%EWSR=2.0.
3491	(3)	0.12	
3587			
3634			
3711	4	0.09	
3767	5	0.08	
3833			
3877	4	0.19	
3944	5	0.14	
4003			
4040	4	0.20	
4080	4	0.21	
4181	3	0.15	%EWSR=0.5.
4241	4	0.09	

Continued on next page (footnotes at end of table)

^{92}Zr(α,α') 1986Si17 (continued)

^{92}Zr Levels (continued)

E(level)[†]	L[‡]	β_LR[#]	Comments
4316			
4397	2	0.10	
4453	4	0.23	
4539	3	0.09	
4606	(5)	0.09	
4710			
4772			
4807	(3)	0.13	
4837			
4920	5	0.11	
5012			
5056	4	0.13	
5112			
5455			
5537			
5581	(2)	0.11	
5685	3	0.14	%EWSR=0.6.
5885	3		%EWSR=1.3. E=5928 in 1980ToZS.
6056[a]	3		%EWSR=0.5.
6125			
6187[a]	3		%EWSR=1.0.
6334[a]	3		%EWSR=1.1.
6436[a]	3		%EWSR=1.1.
7620[ab]	3		%EWSR=4.8.
8320[ac]	3		%EWSR=5.7.

[†] From 1986Si17. ΔE=10 keV at 2 MeV, ΔE≈20 keV near 5 MeV. Evaluator assumes ΔE=20 keV for E≥2500 for the purpose of deducing adopted energies.

[‡] Based on DWBA analysis of $\sigma(\theta)$; from 1986Si17 for E<5700 and from 1980ToZS for E≥5700.

[#] β_LR values from 1986Si17. Some deformation lengths are given by 1974Ku22 also, and β_3 is given for several levels by 1980ToZS.

[@] Angular distribution differs from those for other L=2 states.

[&] Energy coincides with that for 3$^-$ level in ^{90}Zr which is strongly excited in inelastic scattering. Target contained 2.8% ^{90}Zr. Peak also visible in authors′ spectrum from a ^{94}Zr target which contained 1.8% ^{90}Zr.

[a] From 1980ToZS. ΔE not stated by authors; near 5800 keV, E from 1980ToZS appears to be ≈40 keV higher than that from 1986Si17.

[b] Average energy for a group of 3$^-$ states between 7270 keV and 7970 keV. E not included in Adopted Levels.

[c] Average energy for a group of 3$^-$ states between 7970 keV and 8670 keV. E not included in Adopted Levels.