

$^{96}\text{Zr}(\alpha, \alpha')$ 1986La18

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|-------------------------------|---------|----------------------|------------------------|
| Full Evaluation | D. Abriola(a), A. A. Sonzogni | | NDS 109, 2501 (2008) | 1-Apr-2008 |

1969Bi03: E=65 MeV, FWHM=200-250 keV; measured elastic and inelastic scattering; DWBA analysis.

1986La18: E=35.4 MeV, FWHM=35-50 keV; measured elastic and inelastic scattering; DWBA analysis.

1987Ry01: E=35.4 MeV, FWHM=40-70 MeV; measured elastic and inelastic scattering; DWBA analysis.

1995Lu01: E=35.4 MeV, FWHM \approx 130 keV; measured elastic and inelastic scattering; deformed optical model potential (DOMP),

and folding model analysis using both random-phase approximation (RPA) and Bohr-Mottelson (B-M) forms for transition densities.

Other: 1995FuZY.

M_n =neutron multipole transition matrix element.

M_p =proton multipole transition matrix element.

 ^{96}Zr Levels

| E(level) [†] | L [‡] | βR [‡] | Comments |
|-----------------------|----------------|------------------------|---|
| 0.0 | | | |
| 1761 15 | 2 | 0.64 | B(E2): 0.027 7 (1987Ry01), 0.025 5 (1995Lu01); deformation length: 0.639 fm 3 (1987Ry01), 0.59 fm 3 (1995Lu01). M_n/M_p : 4.7 6 (1987Ry01), 3.7 5 (DOMP) (1995Lu01), 4.3 7 (B-M folding with B(E2)=0.022 5) (1995Lu01). |
| 1910 15 | 3 | 1.19 | B(E3): 0.104 26 (1987Ry01), 0.060-0.080 (1995Lu01); deformation length: 1.228 fm 11 (1987Ry01), 1.11 fm 6 (1995Lu01). M_n/M_p : 2.7 5 (1987Ry01), 1.22 11 (DOMP with B(E3)=0.120) (1995Lu01), 1.82 12 (B-M folding with B(E3)=0.120) (1995Lu01). |
| 2861 15 | 4 | 0.18 | |
| 2934 15 | 5 | 0.09 | |
| 3085 15 | 4 | 0.32 | |
| 3120 15 | 5 | 0.37 | |
| 3178 15 | 4 | 0.51 | |
| 3214 15 | | | |
| 3253 15 | 2 | 0.16 | |
| 3432 15 | (4) | | |
| 3482 15 | 6(+2) | | |
| 3557 15 | 2 | 0.13 | |
| 3608 15 | (5,6) | | |
| 3696 15 | 3 | 0.16 | |
| 3751 15 | (4) | | |
| 3924 15 | 4 | 0.08 | |
| 4024 15 | (5) | | |
| 4139 15 | 3 | 0.18 | |
| 4241 15 | (7) | | |
| 4340 15 | | | |
| 4422 15 | 6 | 0.17 | |
| 4534 15 | 3 | 0.16 | |
| 4650 15 | | | |
| 4794 15 | 3 | 0.12 | |
| 4845 15 | 3 | 0.12 | |
| 4927 15 | | | |
| 5103 15 | | | |
| 5325 15 | 4 | 0.12 | |
| 5371 15 | 4 | 0.10 | |

[†] From 1986La18 with an average calibration error ΔE of about 10-15 keV.

[‡] From DWBA analysis (1986La18).