

$^{110}\text{Cd}(p,p'),(d,d')$ 1990Pi14,1992Pi08

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|-----------------|----------------------------|---------|----------------------|------------------------|
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1990Pi14,1992Pi08: $E_p=30.7$ MeV, $E_d= 50.7$ MeV. The momentum analyzed beams were provided by KVI cyclotron. ≈ 1 mg/cm² thick, 95% enriched ^{110}Cd target was used. The scattered particles were detected in the focal plane of the KVI QMG/2 magnetic spectrograph by a detection system consisting of a multiwire drifted chamber backed by a scintillator counter. Measured: $\sigma(E(p),\theta)$, $\sigma(ED,\theta)$. Deduced: ^{110}Cd levels, J^π , β_L (deformation parameter) and B(E4)-values.

Others: 1994Pe23, 1989Va02, 1969Ko01, 1969Lu02, 1966Ki04, 1965Co04.

 ^{110}Cd Levels

B(E4)(W.u.): Isoscalar reduced transition probabilities are from 1992Pi08 (deduced from coupled channel calculations using the ECIS code).

| E(level) [†] | J^π [‡] | Comments |
|-----------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 0.0 | 0 ⁺ | |
| 658 2 | 2 ⁺ | $\beta_2=0.168$ 17 (1989Va02), 0.20 (1969Ko01), 0.192 (1969Lu02). |
| 1476 2 | 2 ⁺ | |
| 1543 2 | 4 ⁺ | B(E4)(W.u.)=0.16 4. |
| 1735 2 | 0 ⁺ | |
| 1783 2 | 2 ⁺ | |
| 2079 2 | 3 ⁻ | $\beta_3=0.146$ 15 (1989Va02), 0.16 (1969Ko01), 0.168 (1969Lu02), 0.138, 0.122 (from (p,p') and (d,d'), respectively in 1990Pi14). |
| 2164 2 | | |
| 2184 2 | (1 ⁻) | |
| 2220 2 | 4 ⁺ | B(E4)(W.u.)=14.0 24. |
| 2250 2 | 4 ⁺ | B(E4)(W.u.)=2.8 4. |
| 2288 2 | 2 ⁺ | |
| 2330 2 | 2 ⁺ | |
| 2357 2 | 2 ⁺ | |
| 2377 2 | 4 ⁺ | B(E4)(W.u.)=0.43 6. |
| 2385 2 | (2 ⁺) | |
| 2405 2 | (0 ⁺ ,2 ⁻) | |
| 2432 2 | | |
| 2451 2 | | |
| 2481 2 | 3 ⁻ | |
| 2538 3 | 5 ⁻ | |
| 2561 3 | 4 ⁺ | B(E4)(W.u.)=5.9 7. |
| 2631 3 | 2 ⁺ | |
| 2650 3 | 1 ⁻ | |
| 2660 3 | 5 ⁻ | |
| 2705 3 | | E(level): unresolved doublet with $J^\pi=(4^+)$ for both levels. B(E4)(W.u.)=0.55 15. |
| 2757 3 | 2 ⁻ | |
| 2787 3 | 2 ⁺ | |
| 2840 3 | 5 ⁻ | |
| 2867 3 | 2 ⁺ | |
| 2877 3 | (6 ⁺) | |
| 2915 3 | 4 ⁺ | B(E4)(W.u.)=1.81 23. |
| 2982 3 | | E(level): unresolved doublet with $J^\pi=(3^-)$ and (4 ⁺). |
| 2991 3 | (5 ⁻) | |
| 3021 3 | (1 ⁻) | |
| 3061 3 | 4 ⁺ | B(E4)(W.u.)=0.26 5. |
| 3101 3 | 2 ⁺ | |

Continued on next page (footnotes at end of table)

$^{110}\text{Cd}(p,p'),(d,d')$ **1990Pi14,1992Pi08** (continued) ^{110}Cd Levels (continued)

| E(level) [†] | J ^π [‡] | Comments |
|-----------------------|-----------------------------------|----------------------|
| 3118 3 | 2 ⁺ | |
| 3143 3 | | |
| 3183 3 | (4 ⁺) | B(E4)(W.u.)=0.54 13. |
| 3199 3 | (2 ⁻) | |
| 3251 3 | 3 ⁻ | |
| 3278 3 | (3 ⁻) | |
| 3302 3 | 1 ⁻ | |
| 3309 3 | 2 ⁺ | |
| 3340 3 | (5 ⁻ ,6 ⁺) | |
| 3373 3 | 4 ⁺ | B(E4)(W.u.)=1.23 18. |
| 3413 3 | 4 ⁺ | B(E4)(W.u.)=0.46 7. |
| 3447 3 | 1 ⁻ | |
| 3461 3 | (2 ⁺) | |
| 3476 3 | 1 ⁻ | |
| 3489 3 | (0 ⁺) | |
| 3498 3 | 2 ⁺ | |
| 3538 4 | (0 ⁺) | |
| 3604 4 | 3 ⁻ | |
| 3632 4 | 2 ⁺ | |
| 3657 4 | (2 ⁺) | |
| 3689 4 | 3 ⁻ | |
| 3736 4 | 2 ⁺ | |
| 3776 4 | (2 ⁺ ,3 ⁻) | |
| 3824 4 | | |
| 3847 4 | 2 ⁺ | |
| 3891 4 | (2 ⁺) | |
| 3920 4 | 2 ⁺ | |
| 3957 4 | | |
| 3997 4 | 2 ⁺ | |
| 4034 5 | | |
| 4067 5 | | |
| 4098 5 | (2 ⁺) | |
| 4143 5 | | |
| 4170 5 | | |
| 4200 5 | 2 ⁺ | |

[†] From $^{110}\text{Cd}(p,p')$ and $^{110}\text{Cd}(d,d')$ in [1992Pi08](#), [1990Pi14](#). $\Delta E(\text{level}) \approx 2$ keV for $E(\text{level}) < 2.5\text{MeV}$ and up to $\Delta E \approx 5\text{keV}$ for $E(\text{level}) > 2.5\text{MeV}$ in [1992Pi08](#).

[‡] Deduced from comparison of experimental angular distributions with coupled-channel calculations using the ECIS code in [1992Pi08](#) and [1990Pi14](#), unless otherwise stated.