

$^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ **2005Ko32,1999Le31**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. Lalkovski, F. G. Kondev		NDS 124, 157 (2015)	1-Aug-2014

2005Ko32,1999Le31: Facility: Stuttgart Dynamotron; Beam: Bremsstrahlung at 3.15, 4.0, 4.1 MeV; Target: CdO enriched to 98.17% in ^{112}Cd and sandwiched between ^{27}Al disks; Detectors: four HP Ge detectors, one of which Compton-suppressed with BGO, and two segmented Ge polarimeters; Measured: γ , γ - γ coinc, γ - $\gamma(\theta)$, $\gamma(\text{lin pol})$, $E\gamma$, $I\gamma$; Deduced: E(level), J^π , Γ , BR, $B(\sigma\lambda)$. FWHM is 2 keV for 1.3 MeV γ and 3 keV for 3 MeV γ -rays; Also, from the same collaboration: [2001Ko49](#), [2000Ko47](#).

 ^{112}Cd Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	$I_{s,0}$ [eV.b] [@]	Comments
0	0 ⁺			
617	2 ⁺			
2418.0 <i>10</i>	(1,2 ⁺)	1.29 ps 3	0.7 1	$T_{1/2}$: assuming J=1.
2506.0 <i>10</i>	1 ⁻	36.6 fs 19	16.7 8	
2694.0 <i>10</i>	(1)	0.72 ps 14	1.0 2	
2829.0 <i>10</i>	1 ⁻	21.0 fs 16	4.5 3	
2931.0 <i>10</i>	1 ⁺	12.3 fs 7	12.4 6	
3133.0 <i>10</i>	1 ⁻	10.7 fs 5	26.1 11	
3231.1 <i>10</i>	1 ⁺	26.7 fs 16	9.8 5	
3300.1 <i>10</i>	(1)	40.6 fs 22	7.5 4	
3375.1 <i>10</i>	(1)	87 fs 13	1.4 2	
3557.1 <i>10</i>	(1,2 ⁺)	0.52 ps 13	0.8 2	
3568.1 <i>10</i>	2 ⁺	60 fs 15	0.9 2	
3594.1 <i>10</i>	1,2 ⁺	0.153 ps 25	1.3 2	
3683.1 <i>10</i>	1,2 ⁺	88 fs 14	4.4 7	$I_{s,0}$ [eV.b]: Value corrected for a small ^{13}C contamination of the target.
3704.1 <i>10</i>	1,2 ⁺	65 fs 6	5.9 5	
3810.1 <i>10</i>	1,2 ⁺	17 fs 3	17.3 11	
3846.1 <i>10</i>	(1,2 ⁺)	0.20 ps 3	1.8 3	
3869.1 <i>10</i>	(1,2 ⁺)	20 fs 5	11.3 9	
3933.1 <i>10</i>	(1,2 ⁺)	76 fs 10	4.5 6	
3997.1 <i>10</i>	1,2 ⁺	2.4 fs 6	6.3 10	

[†] From a least-squares fit to $E\gamma$.

[‡] From the Adopted Levels.

[#] Calculated by the evaluators from $I_{s,0}$ in [1999Le31](#) and Branching from adopted gammas.

[@] Integrated cross section from [1999Le31](#).

 $\gamma(^{112}\text{Cd})$

$E_i(\text{level})$	J_i^π	E_γ [†]	Γ_0/Γ [‡]	E_f	J_f^π	Mult.	Comments
2418.0	(1,2 ⁺)	2418 1	100	0	0 ⁺		
2506.0	1 ⁻	2506 1	85.4 8	0	0 ⁺	E1	Mult.: $\varepsilon=-0.10$ 8 from polarization measurements in $^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ (2005Ko32).
2694.0	(1)	2694 1	100	0	0 ⁺		
2829.0	1 ⁻	2829 1	37.9 7	0	0 ⁺		
2931.0	1 ⁺	2931 1	49.9 9	0	0 ⁺	M1	Mult.: $\varepsilon=+0.08$ 10 from polarization measurements in $^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ (2005Ko32). Γ_0/Γ : 70 4 in 1999Le31 .
3133.0	1 ⁻	3133 1	72.1 8	0	0 ⁺	E1	Mult.: $\varepsilon=-0.13$ 6 from polarization measurements in $^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ (2005Ko32).
3231.1	1 ⁺	3231 1	72.0 11	0	0 ⁺	M1	Mult.: $\varepsilon=+0.27$ 12 from polarization measurements in $^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ (2005Ko32).

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$^{112}\text{Cd}(\gamma, \text{pol } \gamma')$ 2005Ko32,1999Le31 (continued) $\gamma(^{112}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	Γ_0/Γ^\ddagger	E_f	J_f^π	Comments
3300.1	(1)	3300 <i>l</i>	79.4 <i>3</i>	0	0 ⁺	Γ_0/Γ : 74 5 in 1999Le31.
3375.1	(1)	3375 <i>l</i>	51.3 <i>8</i>	0	0 ⁺	
3557.1	(1,2 ⁺)	3557 <i>l</i>	100	0	0 ⁺	
3568.1	2 ⁺	3568 <i>l</i>	27.9 <i>14</i>	0	0 ⁺	
3594.1	1,2 ⁺	3594 <i>l</i>	70.0 <i>20</i>	0	0 ⁺	
3683.1	1,2 ⁺	3683 <i>l</i>	100	0	0 ⁺	
3704.1	1,2 ⁺	3704 <i>l</i>	100	0	0 ⁺	
3810.1	1,2 ⁺	3810 <i>l</i>	90 <i>8</i>	0	0 ⁺	Γ_0/Γ : From 1999Le31.
3846.1	(1,2 ⁺)	3846 <i>l</i>	100	0	0 ⁺	
3869.1	(1,2 ⁺)	3869 <i>l</i>	80 <i>9</i>	0	0 ⁺	Γ_0/Γ : From 1999Le31.
3933.1	(1,2 ⁺)	3933 <i>l</i>	100	0	0 ⁺	
3997.1	1,2 ⁺	3997 <i>l</i>	21.3 <i>19</i>	0	0 ⁺	

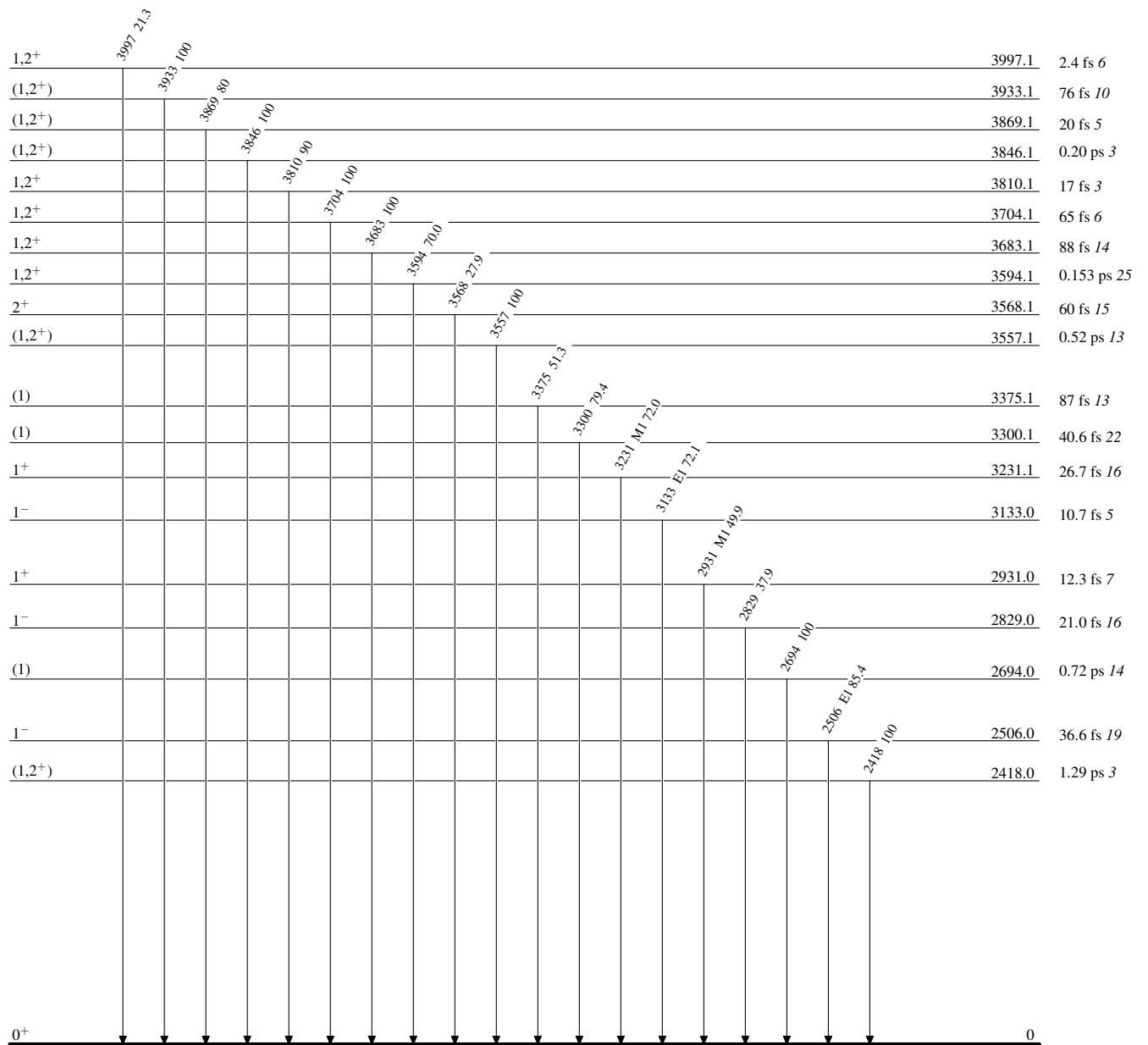
[†] From 1999Le31, ΔE_γ deduced by the evaluators.

[‡] From adopted gammas.

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Level Scheme

Intensities: % photon branching from each level

 $^{112}_{48}\text{Cd}_{64}$