

Coulomb excitation 2015Ga19

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

Beam: E(^{202}Rn)=2.90 MeV/nucleon from U(p,X), E=1.4 GeV produced at REX-ISOLDE-CERN facility. Targets= ^{120}Sn foil of 2.0 mg/cm² thickness, and ^{109}Ag foil of 4.0 mg/cm² thickness. Measured: E γ , (particle) $\gamma\gamma$ -coin using double-sided silicon strip detectors for scattered particles and the Miniball array for γ rays. GOSIA analysis.

 ^{202}Rn Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
0.0 [#]	0 ⁺		
504.00 [#] 10	2 ⁺	8.4 ps 25	B(E2) $\uparrow$ =1.0 3 Q=+0.9 +29-18 (2015Ga19) B(E2) $\uparrow$ from $\langle 0_1^+ E2 2_1^+ \rangle = 1.00$ eb +15-14 (2015Ga19). $\langle 2_1^+ E2 2_1^+ \rangle = +0.5 +21-17$ (2015Ga19). T _{1/2} : From B(E2) $\uparrow$. J π : from 2015Ga19.
1029.7 [@] 3	(2 ⁺)		J π : from 2015Ga19.
1073.10 [#] 23	4 ⁺	2.1 ps 6	T _{1/2} : From B(E2)(W.u.)=63 18 in 2015Ga19.
1502.2 [@] 6	(4 ⁺)		J π : from 2015Ga19.
1698.3 [#] 3	6 ⁺		

[†] From a least-squares fit to E γ .

[‡] From Adopted Levels, unless otherwise stated.

[#] Band(A): K π =0⁺, ground-state band.

[@] Band(B): Excited band based on the (2⁺) state at 1029.7 keV.

 $\gamma(^{202}\text{Rn})$

E γ [†]	I γ [‡]	E _i (level)	J π _i	E _f	J π _f	Mult. [†]	α [#]	Comments
472.5 5		1502.2	(4 ⁺)	1029.7	(2 ⁺)			
504.0 1	990 37	504.00	2 ⁺	0.0	0 ⁺	E2	0.0345 5	$\alpha(K)=0.02325$ 33; $\alpha(L)=0.00843$ 12; $\alpha(M)=0.002141$ 30 $\alpha(N)=0.000557$ 8; $\alpha(O)=0.0001170$ 16; $\alpha(P)=1.505 \times 10^{-5}$ 21 B(E2)(W.u.)=29 8 in 2015Ga19, but 28 9 determined by the evaluator using B(E2) $\uparrow$. B(E2)(W.u.)=160 +90-50 (2015Ga19) $\alpha(K)=0.0599$ 8; $\alpha(L)=0.01256$ 18; $\alpha(M)=0.00304$ 4 $\alpha(N)=0.000792$ 11; $\alpha(O)=0.0001711$ 24; $\alpha(P)=2.406 \times 10^{-5}$ 34 $\delta(E2/M1)=1.1$ was assumed by 2015Ga19 in their data analysis, from comparison to known values in the region.
525.7 3	27 7	1029.7	(2 ⁺)	504.00	2 ⁺	[E2]	0.0765	B(E2)(W.u.)=63 18 (2015Ga19) $\alpha(K)=0.01829$ 26; $\alpha(L)=0.00583$ 8; $\alpha(M)=0.001468$ 21 $\alpha(N)=0.000382$ 5; $\alpha(O)=8.06 \times 10^{-5}$ 11; $\alpha(P)=1.054 \times 10^{-5}$ 15
569.1 2	29 6	1073.10	4 ⁺	504.00	2 ⁺	E2	0.0261 4	$\alpha(K)=0.01524$ 21; $\alpha(L)=0.00445$ 6; $\alpha(M)=0.001111$ 16 $\alpha(N)=0.000289$ 4; $\alpha(O)=6.13 \times 10^{-5}$ 9; $\alpha(P)=8.11 \times 10^{-6}$ 11
625.2 2		1698.3	6 ⁺	1073.10	4 ⁺	E2	0.02115 30	

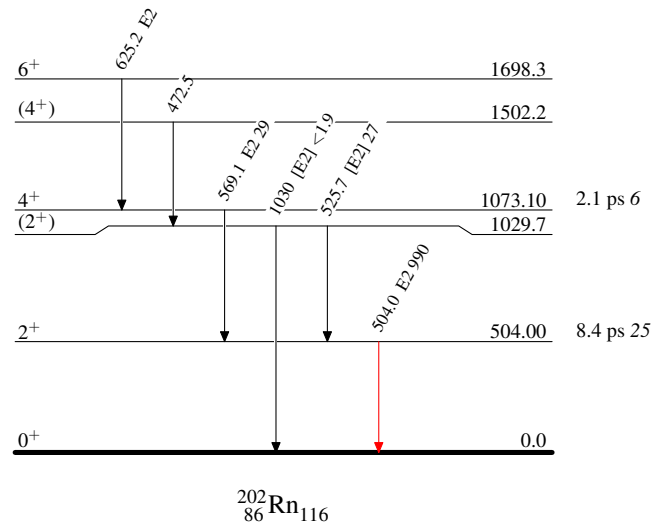
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Coulomb excitation 2015Ga19 (continued) $\gamma(^{202}\text{Rn})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	$\alpha^\#$	Comments
1030	<1.9	1029.7	(2 ⁺)	0.0	0 ⁺	[E2]	0.00768 11	B(E2)(W.u.)<0.7 (2015Ga19) $\alpha(\text{K})=0.00602$ 8; $\alpha(\text{L})=0.001257$ 18; $\alpha(\text{M})=0.000304$ 4 $\alpha(\text{N})=7.91\times 10^{-5}$ 11; $\alpha(\text{O})=1.703\times 10^{-5}$ 24; $\alpha(\text{P})=2.377\times 10^{-6}$ 33 E_γ : From 2015Ga19. I_γ : <19 9 in 2015Ga19 is probably a typo, since B(E2)(W.u.)<0.4 in 2015Ga19 is consistent with $I_\gamma < 1.9$.

[†] From adopted gammas.[‡] From ^{120}Sn target data (2015Ga19).[#] Additional information 1.**Coulomb excitation 2015Ga19****Level Scheme**Intensities: Relative I_γ **Legend**

-  $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 $I_\gamma > 10\% \times I_\gamma^{\text{max}}$



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