

$^{191}\text{Ir}(\alpha, 5n\gamma)$ 1982Ne05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, ¹ and Jun Chen ²		NDS 169, 1 (2020)	15-Oct-2020

1982Ne05 (also 1979Ne01): E=61.5, 63 MeV. Measured E_γ , I_γ , $\gamma\gamma$ -coin, $\gamma(\theta)$, $\gamma(t)$ with pulsed beam.

 ^{190}Au Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.0+x	(11 ⁻)	125 ms 20	%IT $\approx$ 100 E(level): x=200 150 (2017Au03,syst); 260 100 (from energies of γ rays observed, but unplaced). J^π : from systematics, similar isomers in ^{192}Au and ^{194}Au with possible configuration= $\pi h_{11/2}^{-1} \otimes \nu i_{13/2}^{-1} 11^-$ (1982Ne05). $T_{1/2}$: from $\gamma(t)$ with pulsed beam. The following γ rays were associated with the decay of the (11 ⁻) isomer: 41, 47, 115 and 155. The decay scheme of the isomer is not established.
282.0+x 3	(12 ⁻)		
427.7+x 3	(13 ⁻)		
743.4+x 4	(14 ⁻)		
1145.3+x 4	(15 ⁻)		
1467.7+x 5	(16 ⁻)		
1598.0+x 4	(15 ⁺)		
1830.0+x 4	(17 ⁺)		
1834.8+x 4	(16)		E(level): level not confirmed in 2004Gu07; not included in the Adopted dataset.
1929.1+x 4	(17 ⁻)		
2148.1+x 5	(18 ⁺)		
2171.2+x 4	(20 ⁺)		E(level): from 2001Gu29.
2282.5+x 5	(19)		
2436.2+x 5	(19 ⁻)		
2661.8+x 5	(21 ⁺)		J^π : 1982Ne05 proposed 19.
2726.7+x 5	(22 ⁺)		J^π : 1982Ne05 proposed 20.
2728.8+x 5	(20 ⁻)		

[†] The uncertainty in the numerical value is 0.3 to 0.8 keV.

[‡] As given in 1982Ne05 from $\gamma(\theta)$ and band assignments. See also Adopted Levels for band assignments based on those proposed by 2004Gu07.

 $\gamma(^{190}\text{Au})$

E_γ [†]	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
(23.1 5)		2171.2+x	(20 ⁺)	2148.1+x	(18 ⁺)		E_γ : from 2001Gu29.
111.3 3	0.2 1	2282.5+x	(19)	2171.2+x	(20 ⁺)	D	$A_2=-0.12$ 5; $A_4=0.00$ 7
145.6 3	0.9 2	427.7+x	(13 ⁻)	282.0+x	(12 ⁻)	D	$A_2=-0.27$ 3; $A_4=+0.04$ 5
232.0 3	1.9 2	1830.0+x	(17 ⁺)	1598.0+x	(15 ⁺)	(Q)	$A_2=+0.32$ 2; $A_4=+0.04$ 3
236.8 3	0.4 1	1834.8+x	(16)	1598.0+x	(15 ⁺)	D	$A_2=-0.26$ 4; $A_4=+0.12$ 6
							E_γ : γ not reported by 2004Gu07; not included in the Adopted dataset.
282.0 3	3.5 3	282.0+x	(12 ⁻)	0.0+x	(11 ⁻)	D	$A_2=-0.04$ 2; $A_4=+0.01$ 3
292.6 3	0.3 1	2728.8+x	(20 ⁻)	2436.2+x	(19 ⁻)	D	$A_2=+0.19$ 7; $A_4=-0.44$ 10
							Placement by 1982Ne05 from 2221.7+x, 18 ⁻ level revised based on data in 2004Gu07.
315.7 5	4.3 [#] 3	743.4+x	(14 ⁻)	427.7+x	(13 ⁻)	(D)	$A_2=+0.01$ 1; $A_4=-0.01$ 2
318.1 5	1.5 [#] 2	2148.1+x	(18 ⁺)	1830.0+x	(17 ⁺)	(D)	$A_2=+0.06$ 2; $A_4=-0.06$ 3
322.7 5	0.7 [#] 2	1467.7+x	(16 ⁻)	1145.3+x	(15 ⁻)	(D)	$A_2=+0.10$ 3; $A_4=-0.05$ 5

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$^{191}\text{Ir}(\alpha,5n\gamma)$ **1982Ne05 (continued)** $\gamma(^{190}\text{Au})$ (continued)

E_γ [†]	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
362.3 3	0.8 2	1830.0+x	(17 ⁺)	1467.7+x	(16 ⁻)	D	$A_2=-0.22$ 3; $A_4=+0.03$ 5
402.0 3	0.7 2	1145.3+x	(15 ⁻)	743.4+x	(14 ⁻)	D	$A_2=-0.15$ 4; $A_4=-0.02$ 6
427.7 3	4.9 3	427.7+x	(13 ⁻)	0.0+x	(11 ⁻)	(Q)	$A_2=+0.32$ 4; $A_4=-0.06$ 6
461.8 @ 5	1.0 @ # 3	743.4+x	(14 ⁻)	282.0+x	(12 ⁻)	(Q)	$A_2=+0.24$ 2; $A_4=-0.05$ 3 A_2 and A_4 for doublet.
461.8 @ 5	0.3 @ 1	1929.1+x	(17 ⁻)	1467.7+x	(16 ⁻)		
490.6 3	0.3 1	2661.8+x	(21 ⁺)	2171.2+x	(20 ⁺)	D	$A_2=-0.22$ 6; $A_4=-0.02$ 9
507.0 5	0.3 # 1	2436.2+x	(19 ⁻)	1929.1+x	(17 ⁻)		$A_2=+0.28$ 4; $A_4=+0.07$ 6 Placement by 1982Ne05 from 2728.7+x, 19 ⁻ level revised based on data in 2004Gu07 .
555.5 5	0.9 # 2	2726.7+x	(22 ⁺)	2171.2+x	(20 ⁺)	(Q)	$A_2=+0.24$ 6; $A_4=-0.05$ 9
717.3 5	1.8 # 2	1145.3+x	(15 ⁻)	427.7+x	(13 ⁻)	(Q)	$A_2=+0.21$ 3; $A_4=-0.04$ 5
724.3 5	1.0 # 2	1467.7+x	(16 ⁻)	743.4+x	(14 ⁻)	(Q)	$A_2=+0.28$ 2; $A_4=-0.04$ 3
783.6 3	0.5 1	1929.1+x	(17 ⁻)	1145.3+x	(15 ⁻)	(Q)	$A_2=+0.30$ 5; $A_4=-0.08$ 8
854.5 3	2.8 3	1598.0+x	(15 ⁺)	743.4+x	(14 ⁻)	D	$A_2=-0.24$ 3; $A_4=+0.01$ 3

[†] Uncertainty=0.3 keV for resolved and 0.5 keV for unresolved peaks (**1982Ne05**).

[‡] Assigned (by evaluators) on the basis of $\gamma(\theta)$ data. **1982Ne05** give explicit E2, M1, etc. based on $\gamma(\theta)$ and band assignment.

From $\gamma\gamma$. Unresolved in singles spectrum.

@ Multiply placed with intensity suitably divided.

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Level Scheme

Intensities: Relative I_γ
 @ Multiply placed: intensity suitably divided

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- - - - - → γ Decay (Uncertain)
- Coincidence

