

Table 18.9 from (1995TI07): Energy levels of ^{18}O ^a

E_x (MeV \pm keV)	$J^\pi; T$	τ^b or $\Gamma_{\text{c.m.}}$	Decay	Reactions
0	$0^+; 1$		stable	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52
1.98207 ± 0.09	2^+	$\tau_m = 2.80 \pm 0.07$ ps ($g = -0.287 \pm 0.015$) ($Q = -0.042 \pm 0.008$ b)	γ	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 17, 19, 20, 21, 22, 25, 26, 27, 28, 29, 30, 32, 33, 39, 40, 42, 44, 45, 47, 48, 49, 50, 51, 52
3.55484 ± 0.40	4^+	$\tau_m = 24.8 \pm 1.2$ ps ($g = -0.62 \pm 0.10$)	γ	3, 4, 7, 9, 10, 15, 16, 17, 19, 20, 21, 22, 25, 28, 33, 39, 40, 51, 52
3.63376 ± 0.11	0^+	$\tau_m = 1.38 \pm 0.16$ ps	γ	3, 4, 7, 9, 10, 15, 19, 22, 25, 28, 33, 39, 40, 50, 51, 52
3.92044 ± 0.14	2^+	$\tau_m = 26.5 \pm 2.9$ fs	γ	3, 4, 7, 9, 10, 15, 19, 22, 25, 28, 33, 39, 51
4.45554 ± 0.10	1^-	$\tau_m = 65 \pm 15$ fs	γ	3, 4, 7, 9, 10, 15, 19, 22, 25, 28, 33, 39, 40, 50, 51
5.09778 ± 0.54	3^-	$\tau_m = 62 \pm 25$ fs	γ	3, 4, 7, 9, 10, 15, 19, 22, 25, 26, 27, 28, 33, 39, 40, 45, 51, 52
5.2548 ± 0.9	2^+	$\tau_m = 10.1 \pm 0.5$ fs	γ	3, 4, 7, 9, 10, 15, 17, 19, 25, 28, 33, 50, 51
5.3364 ± 0.6	0^+	$\tau_m = 200 \pm 40$ fs	γ	3, 4, 9, 15, 19, 25, 33, 51
5.3778 ± 1.2	3^+	$\tau_m < 30$ fs	γ	3, 4, 15, 19, 20, 51
5.53024 ± 0.29	2^-	$\tau_m < 25$ fs $\Gamma < 50$ keV	γ	3, 4, 15, 22, 25, 28, 33, 51

Table 18.9 from (1995TI07): Energy levels of ^{18}O ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ^b or $\Gamma_{\text{c.m.}}$	Decay	Reactions
6.19822 \pm 0.40	1 ⁻	$\tau_m = 3.7 \pm 0.6$ fs	γ	3, 4, 9, 15, 19, 22, 24, 25, 33, 51
6.3513 \pm 0.6	(2 ⁻)	$\tau_m < 35$ fs $\Gamma < 50$ keV	γ	3, 4, 15, 19, 22, 25, 33, 51, 52
6.4044 \pm 1.2	3 ⁻	$\tau_m = 30 \pm 15$ fs	γ	3, 4, 15, 33, 51
6.88045 \pm 0.27	0 ⁻	$\tau_m < 25$ fs	γ	3, 4, 15, 22, 33, 50, 51
7.1169 \pm 1.2	4 ⁺	$\tau_m < 25$ fs	γ, α	3, 4, 7, 9, 10, 15, 17, 19, 20, 25, 28, 33, 37, 39, 40, 51
7.6159 \pm 0.7	1 ⁻	$\Gamma < 2.5$ keV	γ, α	3, 4, 7, 9, 15, 22, 25, 33, 37, 39, 40, 51
7.77107 \pm 0.50	2 ⁻	$\Gamma < 50$ keV	γ	3, 4, 15, 22, 25, 51
7.864 \pm 5	5 ⁻		γ	3, 4, 7, 9, 10, 15, 19, 20, 25, 33, 37, 39, 40, 51, 52
7.977 \pm 4	(3 ⁺ , 4 ⁻)		γ	3, 4, 15, 19, 51
8.0378 \pm 0.7	1 ⁻	$\Gamma < 2.5$ keV	γ, α	3, 4, 7, 8, 15, 16, 17, 22, 25, 37, 39, 40, 51
8.125 \pm 2	5 ⁻		γ, α	3, 4, 7, 9, 10, 15, 25, 51
8.213 \pm 4	2 ⁺	$\Gamma = 1.0 \pm 0.8$ keV	γ, n, α	3, 4, 7, 8, 15, 25, 28, 33, 37, 39, 40, 51
8.282 \pm 3	3 ⁻	$\Gamma = 8 \pm 1$ keV	γ, n, α	3, 4, 7, 8, 9, 10, 15, 25, 33, 51
8.410 \pm 8	(2 ⁻)	$\Gamma = 8 \pm 6$ keV	γ, n, α	8, 15, 25, 51
8.521 \pm 6	(4 ⁻)	$\Gamma < 50$ keV	γ	15, 25, 51
8.660 \pm 6				15, 51
8.817 \pm 12	(1 ⁺)	$\Gamma = 70 \pm 12$ keV	n, α	8, 20, 28, 33
8.955 \pm 4	(4 ⁺)	$\Gamma = 43 \pm 3$ keV	γ, n, α	8, 15, 25, 33
(9.0 \pm 200) ^d	(1 ⁻)		α	22
9.03				15, 19, 33
(9.10)				33

Table 18.9 from (1995TI07): Energy levels of ^{18}O ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ^b or $\Gamma_{\text{c.m.}}$	Decay	Reactions
9.27 ± 20^d	$(0, 1, 2)^-$		n	22
9.361 ± 6	2^+	$\Gamma = 27 \pm 15$ keV	γ, n, α	8, 10, 15, 25, 33, 37, 39, 40
9.414 ± 18		$\Gamma \approx 120$ keV	n, α	8, 10, 15, 33
9.48 ± 24		$\Gamma \approx 65$ keV	n, α	8, 15
9.672 ± 7	(3^-)	$\Gamma = 60 \pm 30$ keV	n, α	8, 15, 33, 37, 39, 40
9.713 ± 7	(5^-)	$\Gamma < 50$ keV	γ	15, 25, 33
9.890 ± 11		$\Gamma \approx 150$ keV	n, α	8, 15, 33
10.118 ± 10	3^-	$\Gamma = 16 \pm 4$ keV	n, α	8, 9, 15, 33
10.24 ± 20^d	$(0, 1, 2)^-$		n	22
10.295 ± 14	4^+	$\Gamma < 50$ keV	γ, n, α	8, 9, 10, 15, 16, 25, 33, 37, 39, 40
10.396 ± 9	3^-		n, α	8, 15, 33
10.43 ± 40	(2^-)	$\Gamma < 50$ keV	γ	25
10.595 ± 15			n, α	8, 15
10.67 ± 20	(2^-)	$\Gamma < 50$ keV	γ	25
10.82 ± 20			n, α	8
10.91 ± 20			n, α	8, 10
10.99 ± 20	(2^-)	$\Gamma < 50$ keV	γ, n, α	8, 25
11.06	(6^-)			20
11.13 ± 20			n, α	8, 10, 50
11.39 ± 20	(2^+)		n, α	8, 9
11.41 ± 20	(4^+)		n, α	8, 9
11.49 ± 30^d	$(0, 1, 2)^-$		n	22
11.52 ± 50	(2^-)	$\Gamma < 50$ keV	γ	25
11.62 ± 20	5^-		n, α	8, 9, 10, 33, 37, 39, 40
11.67 ± 20	(3^-)	$\Gamma = 112 \pm 0.02$ keV		25
11.69 ± 20	6^+		n, α	8, 9, 10, 33
11.82 ± 20	(3^-)		n, α	8
11.90 ± 30	(2^-)	$\Gamma < 50$ keV	γ	25

Table 18.9 from (1995TI07): Energy levels of ^{18}O ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ^b or $\Gamma_{\text{c.m.}}$	Decay	Reactions
12.04 \pm 20	(2 ⁺)		n, α	8, 9
12.09 \pm 20	(1 ⁻ , 2 ⁺)	$\Gamma < 50$ keV		25
12.25 \pm 20	(1 ⁻)		n, α	8, 9
12.33 \pm 20	5 ⁻		n, α	8, 9, 10
12.41 \pm 20	(3 ⁻)	$\Gamma = 143 \pm 24$ keV	γ	25
12.50 \pm 20	4 ⁺		n, α	8, 37, 39, 40
12.52 \pm 20		$\Gamma < 50$ keV	γ	25
12.53 \pm 20	6 ⁺		n, α	8, 9, 10, 37, 39, 40
12.66 \pm 20	(2 ⁻)	$\Gamma < 50$ keV	γ	25
12.99 \pm 20	(4 ⁻)	$\Gamma = 68 \pm 18$ keV	γ	25
13.1 ^c	1 ⁻	$\Gamma = 700$ keV	γ , n	23
13.40 \pm 20	(2 ⁻)	$\Gamma = 108 \pm 20$ keV	γ	25
13.8	1 ⁻	$\Gamma = 600$ keV	γ , n	23
13.85 \pm 13	(6 ⁻)	$\Gamma \approx 200$ keV	γ	20, 25
14.17 \pm 40	(6 ⁻)	$\Gamma = 140 \pm 50$ keV	γ	20, 25
14.45 \pm 50		$\Gamma \approx 1070$ keV	γ	25
14.7	1 ⁻	$\Gamma = 800$ keV	γ , n	23
15.23 \pm 40		$\Gamma \approx 300$ keV	γ	25
15.8	1 ⁻	$\Gamma = 700$ keV	γ , n	23
15.95 \pm 30		$\Gamma < 50$ keV	γ	25
16.210 \pm 10	1 ⁽⁻⁾		γ	25
16.315 \pm 10	(3, 2) ⁻		γ	25
16.399 \pm 5	2 ⁻ ; 2	$\Gamma < 20$ keV	γ	25, 28
16.88 \pm 30	(4 ⁻ , 2 ⁻); (1)	$\Gamma < 50$ keV	γ	25
16.948 \pm 10	(3, 2) ⁻		γ	25
17.025 \pm 10	(3 ⁻); 2	$\Gamma = 20 \pm 6$ keV	γ	25
17.05	(7 ⁻)	$\Gamma \approx 350$ keV		9
17.398 \pm 10	1 ⁻ ; (2)	$\Gamma = 600$ keV	γ , n, p	23, 25
17.450 \pm 10	(2, 1, 3) ⁻		γ	25
17.46 \pm 30	(4 ⁻); 1	$\Gamma \approx 600$ keV	γ	25

Table 18.9 from (1995TI07): Energy levels of ^{18}O ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ^b or $\Gamma_{\text{c.m.}}$	Decay	Reactions
17.5		$\Gamma \approx 150$ keV	γ	25
17.502 \pm 10	(1, 2, 3) ⁻		γ	25
(17.6 \pm 200)	(8 ⁺)			9
17.635 \pm 10			γ	25
18.049 \pm 10			γ	25
18.2		$\Gamma \approx 150$ keV	γ	25
18.45 \pm 20	(3 ⁻); (1)	$\Gamma = 75 \pm 27$ keV	γ	25
18.5		$\Gamma \approx 4300$ keV	γ	25
18.70 \pm 20	(4 ⁻); 2	$\Gamma < 20$ keV	γ	25
18.871 \pm 5	1 ⁺ ; 2		γ	25
18.927 \pm 10	(1, 2 ⁺)		γ	25
18.95	(7 ⁻)	$\Gamma \approx 350$ keV		9
19.027 \pm 10	(1, 3) ⁻		γ	25
19.150 \pm 10	(1 ⁻ , 2 ⁺ , 3 ⁻)		γ	25
19.24 \pm 20	(> 2); 2	$\Gamma < 20$ keV	γ	25
19.4	1 ⁻ ; (2)	$\Gamma = 900$ keV	γ, p	23
19.7		$\Gamma \approx 200$ keV	γ	25
20.2		$\Gamma \approx 180$ keV	γ	25
20.36 \pm 20	(4 ⁻); 2	$\Gamma < 20$ keV	γ	25
20.86 \pm 20		$\Gamma = 97 \pm 41$ keV	γ	25
21.0	1 ⁻ ; (1)	$\Gamma \approx 150$ keV	$\gamma, \text{n}, \text{p}$	23, 25
21.42 \pm 20	(4 ⁻); (2)	$\Gamma < 50$ keV	γ	25
22.40 \pm 20	4 ⁻ ; 2	$\Gamma = 91 \pm 8$ keV	γ	25
22.7	1 ⁻		$\gamma, \text{n}, \text{p}$	23
23.10 \pm 20		$\Gamma = 49 \pm 24$ keV	γ	25
23.8	1 ⁻ ; (1)	$\Gamma \approx 1500$ keV	$\gamma, \text{n}, \text{p}$	23, 25
27	1 ⁻ ; (2)		$\gamma, \text{n}, \text{p}$	23
30			γ, n	23
36			γ	23

- ^a See also Tables [18.10](#) and [18.21](#) here and [18.12 in \(1983AJ01\)](#).
- ^b See [Table 18.14 in \(1978AJ03\)](#) for a display of τ_m measurements.
- ^c For additional states with $12.9 \leq E_x \leq 23.1$ MeV see [\(1983CU03\)](#) [[reaction 9](#)].
- ^c See [reaction 22 in ¹⁸O](#) and [Table 18.18](#) for discussion of this level.