

Table 4.3 from (1992TI02): Energy levels of  ${}^4\text{He}$  defined for channel radii  $a_p = a_n = 4.9$  fm,  $a_d = 7.0$  fm. All energies and widths are in the c.m. system.

$E_x$ (MeV)	$J^\pi$	$T$	$\Gamma_p$ (MeV)	$\Gamma_n$ (MeV)	$\Gamma_d$ (MeV)	$\Gamma$ (MeV)	Decay	Reactions
g.s.	$0^+$	0						
20.21	$0^+$	0	0.50	0.00	0.00	0.50	p	16, 22, 24, 28, 31
21.01	$0^-$	0	0.64	0.20	0.00	0.84	p, n	24
21.84	$2^-$	0	1.26	0.75	0.00	2.01	p, n	24, 29
23.33	$2^-$	1	2.64	2.37	0.00	5.01	p, n	
23.64	$1^-$	1	3.44 <sup>a</sup>	2.76 <sup>a</sup>	0.00	6.20	p, n, ( $\gamma$ )	
24.25	$1^-$	0	3.08 <sup>a</sup>	2.87 <sup>a</sup>	0.15	6.10	p, n, d	3, 4
25.28	$0^-$	1	4.12	3.85	0.00	7.97	p, n	
25.95	$1^-$	1	6.52 <sup>b</sup>	6.14 <sup>b</sup>	0.00	12.66	p, n, $\gamma$	7
27.42	$2^+$	0	0.25	0.23	8.21 <sup>c</sup>	8.69	p, n, d	6, 28, 32
28.31	$1^+$	0	4.72	4.66	0.51	9.89	p, n, d	
28.37	$1^-$	0	0.07	0.08	3.77	3.92	(p, n), d	(3, 4), 6, 28
28.39	$2^-$	0	0.02	0.02	8.71	8.75	(p, n), d	(3, 4), 6
28.64	$0^-$	0	0.00	0.00	4.89	4.89	d	6
28.67	$2^+$	0	0.00	0.00	3.78 <sup>d</sup>	3.78	d, $\gamma$	6, 21
29.89	$2^+$	0	0.04	0.04	9.64 <sup>e</sup>	9.72	(p, n), d	28

<sup>a</sup> Primarily  ${}^3\text{P}_1$ .

<sup>b</sup> Primarily  ${}^1\text{P}_1$ .

<sup>c</sup> Primarily  ${}^5\text{S}_2$ .

<sup>d</sup> Primarily  ${}^1\text{D}_2$ .

<sup>e</sup> Primarily  ${}^5\text{D}_2$ .