R-matrix parameters in Be7_IAEA_kunieda.amur

Ian Thompson
(Dated: August 29, 2018)

TABLE I: Particle Properties. Masses are in amu, and excitation energies in MeV.

Particle	Mass	Charge	Spin	Parity	E^*
H1	1.00782503207	1	0.5	1	0.0
He3	3.01602931914	2	0.5	1	0.
He4	4.00260325415	2	0.0	1	0.0
Li6	6.015122794	3	1.0	1	0.

TABLE II: Channel Properties. Q values are in MeV, and radii in fm.

GNDS Label	Projectile	Target	Q value	Radius	Compound	Eliminated
H1 + Li6	H1	Li6	−4.01963212915	3.94397	Be7	False
He4 + He3	He4	He3	0.0	4.24151	Be7	False

TABLE III: R-matrix parameters in the $B = -L$ basis.
Pole energies in the laboratory frame of the elastic channel.
Reduced width amplitudes γ_c in units of MeV$^{1/2}$.

$J^\pi = 0.5^-$

E (MeV)	H1+Li6 LS: 1, 1/2	H1+Li6 LS: 1, 3/2	He4+He3 LS: 1, 1/2
42.851181	−0.50482	1.85198	0.00000
42.851181	0.00000	0.00000	0.98875

$J^\pi = 0.5^+$

E (MeV)	H1+Li6 LS: 0, 1/2	H1+Li6 LS: 2, 3/2	He4+He3 LS: 0, 1/2
42.851181	2.66303	1.01127	−2.71649

$J^\pi = 1.5^-$

E (MeV)	H1+Li6 LS: 1, 1/2	H1+Li6 LS: 1, 3/2	H1+Li6 LS: 3, 3/2	He4+He3 LS: 1, 1/2
-3.691023	−1.34077	−0.41816	0.00000	1.05725
42.851181	−2.05569	2.06903	0.00000	0.50436
42.851181	0.00000	0.00000	0.00000	1.85670

$J^\pi = 1.5^+$

E (MeV)	H1+Li6 LS: 0, 3/2	H1+Li6 LS: 2, 1/2	H1+Li6 LS: 2, 3/2	He4+He3 LS: 2, 1/2
42.851181	0.32360	−1.32598	−1.21537	1.34552
42.851181	2.65478	0.00000	0.00000	0.00000

$J^\pi = 2.5^-$

E (MeV)	H1+Li6 LS: 1, 3/2	H1+Li6 LS: 3, 1/2	He4+He3 LS: 3, 1/2
13.373137	0.94880	0.00000	0.18770
16.495411	−0.34947	0.00000	1.18381

$J^\pi = 2.5^+$

E (MeV)	He4+He3 LS: 2, 1/2
42.851181	1.72315

$J^\pi = 3.5^-$

E (MeV)	H1+Li6 LS: 3, 1/2	H1+Li6 LS: 3, 3/2	H1+Li6 LS: 5, 3/2	He4+He3 LS: 3, 1/2
8.107533	0.00000	0.00000	0.00000	0.79362
42.851181	0.00000	0.00000	0.00000	1.91972

$J^\pi = 3.5^+$

E (MeV)	H1+Li6 LS: 2, 3/2
42.851181	3.28320