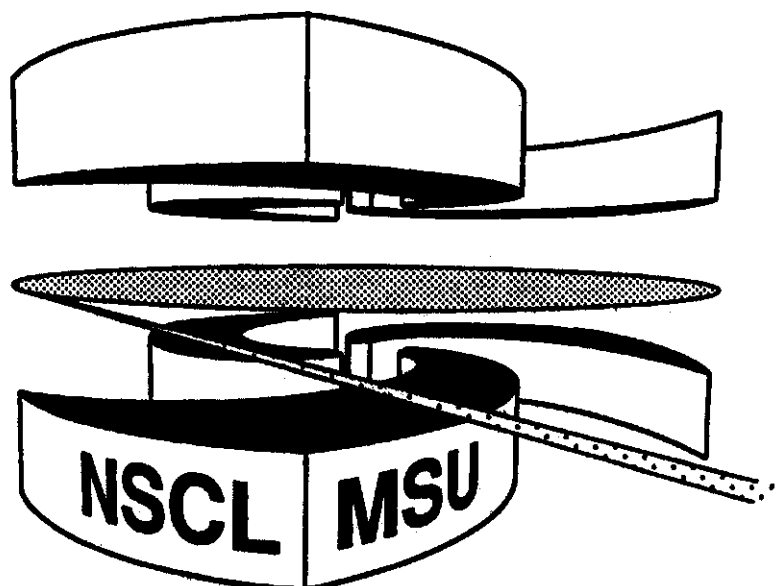# Michigan State University

National Superconducting Cyclotron Laboratory

TABLES OF ONE BODY TRANSITION DENSITY MATRIX ELEMENTS FOR SELECT TRANSITIONS IN ^{6}Li AND ^{7}Li

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Tables of one body transition density matrix elements for select transitions in ^{6}Li and ^{7}Li

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Abstract

One body density matrix elements (OBDME) for select transitions in ^{6}Li and ^{7}Li have been calculated in complete $0\hbar\omega$, $(0 + 2)\hbar\omega$ and $(0 + 2 + 4)\hbar\omega$ shell model spaces. These OBDME are given in a form suitable for use in analyses of elastic and inelastic scattering data.

I. INTRODUCTION

In the analyses of elastic and inelastic scattering data off a nucleus, the details of the nuclear structure is given by the one body (transition) density matrix element (OBDME)

$$S^{(\alpha)}_{j_2 j_1 J} = \left\langle J_f \left\| \left[a^\dagger_{j_2} \times \tilde{a}_{j_1} \right]^J_{(\alpha)} \right\| J_i \right\rangle, \tag{1}$$

where $\tilde{a}_{jm} = (-1)^{j+m} a_{j-m}$, and α specifies either a proton or a neutron. The present compilation presents a calculation of the OBDME for a number of states in ^{6}Li and ^{7}Li using shell model wave functions determined in complete $0\hbar\omega$, $(0+2)\hbar\omega$, and $(0+2+4)\hbar\omega$ shell model spaces. This work follows from previous compilations of OBDME for transitions in ^{12}C, ^{14}N, and ^{16}O [1]. In the case of ^{6}Li, the symmetry of the structure $(N = Z)$ requires that for isoscalar transitions the proton and neutron OBDME are identical, while those for isovector transitions have opposite signs. Thus

$$S^\nu_{j_2 j_1 J} = (-1)^{T_f} S^\pi_{j_2 j_1 J}, \tag{2}$$

where T_f is the isospin of the excited state. The lack of such symmetry in ^{7}Li leads to proton and neutron OBDME which do not satisfy Eq. (2).

II. DETAILS OF CALCULATION

The states in ^{6}Li and ^{7}Li were obtained using the Cohen and Kurath (CK) $(6-16)2$BME [2], MK3W [3], and Zheng $(0+2+4)\hbar\omega$ [4] for calculations within the $0\hbar\omega$, $(0+2)\hbar\omega$, and $(0+2+4)\hbar\omega$ model spaces respectively. The Zheng interaction differs from the other two interactions in that it is based on a multi-valued G-matrix calculation, the G-matrices of which were derived from the Nijmegen nucleon-nucleon potential [6]. For comparison with the fitted interactions, the Zheng $0\hbar\omega$ and $(0+2)\hbar\omega$ interactions [5], based on the same G-matrices, were used to calculate the wave functions. The program OXBASH [7] was used to obtain all the wave functions and OBDME. The relevant states obtained are listed in Table I.

It is interesting to chart the effect of including higher $\hbar\omega$ excitations in the shell model on the spectra obtained. This is possible by comparing the excitation energies obtained by using the three shell model spaces considered herein when using the Zheng interaction. In the case of ^{6}Li, there is a steady convergence to the measured spectrum as one increases the size of the space, an effect which was also reported in Ref. [4]. Including up to $4\hbar\omega$ excitations produces a decrease of 16% in the calculated energy of the 3^+; 0 state, bringing the calculated energy to within 350 keV of experiment. The same trend is noticed in the energy of the 0^+; 1 state. However, in that case, agreement seems to have been reached by including only $2\hbar\omega$ excitations. Inclusion of $4\hbar\omega$ excitations gives less agreement with experiment, suggesting that inclusion of still higher $\hbar\omega$ excitations may be necessary to obtain full agreement. Also, it is interesting to note that of the models, the MK3W model gives the reverse spectrum. This may be due to its use of the Cohen and Kurath $(8-16)2$BME interaction which is not appropriate for mass-6 nuclei.

Higher $\hbar\omega$ excitations are also necessary to describe the states in ^{7}Li. In the case of the $\frac{1}{2}^-$ state, and comparing only the calculations using the Zheng interactions, near agreement with experiment is reached by including only $2\hbar\omega$ excitations, with exact agreement reached by also including $4\hbar\omega$ excitations. However, this is not reflected in the calculations of the $\frac{7}{2}^-$ state. Increasing the size of the space to include $2\hbar\omega$ excitations lessens the agreement with experiment. Inclusion of $4\hbar\omega$ excitations brings better agreement with experiment, but more improvement could be made. This suggests the need for a bigger shell model space.

III. TABLES OF OBDME

The nomenclature used for the labelling of the particle orbits in specifying the OBDME is listed in Table II. The proton and neutron occupation numbers for each state, as calculated in the three Zheng models, are listed in Tables III to V.

The OBDME for the following transitions have been obtained.

- The ground state transition in ^{6}Li, using

  1. the CK interaction (Table VI);

  2. the MK3W interaction (Table VII); and

  3. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table VIII).

- The ground to $3^+; 0$ (2.186 MeV) transition in ^{6}Li, using

  1. the CK interaction (Table IX);

  2. the MK3W interaction (Table X); and

  3. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table XI).

- The ground to $0^+; 1$ (3.563 MeV) transition in ^{6}Li, using

  1. the CK interaction (Table XII);

  2. the MK3W interaction (Table XIII); and

  3. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table XIV).

- The ground state transition in ^{7}Li, using

  1. the CK interaction (Table XV);

  2. the Zheng interaction in the $0\hbar\omega$ space (Table XVI);

  3. the MK3W interaction (Table XVII);

  4. the Zheng interaction in the $(0 + 2)\hbar\omega$ space (Table XVIII); and

  5. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table XIX).

- The ground to $\frac{1}{2}^-$ (0.478 MeV) transition in ^{7}Li, using

  1. the CK interaction (Table XX);

  2. the Zheng interaction in the $0\hbar\omega$ space (Table XXI);

  3. the MK3W interaction (Table XXII);

4. the Zheng interaction in the $(0 + 2)\hbar\omega$ space (Table XXIII); and

5. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table XXIV).

- The ground to $\frac{7}{2}^-$ (4.630 MeV) transition in ^{7}Li, using

1. the CK interaction (Table XXV);

2. the Zheng interaction in the $0\hbar\omega$ space (Table XXVI);

3. the MK3W interaction (Table XXVII);

4. the Zheng interaction in the $(0 + 2)\hbar\omega$ space (Table XXVIII); and

5. the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space (Table XXIX).

In all cases, there is a steady change from the $0\hbar\omega$ models to the $(0 + 2 + 4)\hbar\omega$ model. Strength is carried from the $0p$–shell into the higher shells as the size of the space is increased. This is particularly noticeable when one compares the OBDME for the ground to the $\frac{7}{2}^-$ (4.630 MeV) transition in ^{7}Li, obtained using the Zheng interaction for all the model spaces considered herein. These are listed in Tables XXVI, XXVIII, and XXIX, for the $0\hbar\omega$, $(0 + 2)\hbar\omega$, and $(0 + 2 + 4)\hbar\omega$ spaces respectively. Those obtained in the $0\hbar\omega$ space are quite similar to those obtained using the CK interaction (Table XXV). The $0p_{\frac{3}{2}} \rightarrow 0p_{\frac{1}{2}}$ transition, being the most dominant for $J = 2$, shows a steady decrease as the particles are distributed into the higher shells. Also, note that the effect of increasing the space allows for the $J > 3$ multipoles (in all transitions where these are possible), which are inaccesible in the $0\hbar\omega$ space. This redistribution of strength is responsible for the core polarisation corrections normally required in the $0\hbar\omega$ models.

IV. SUMMARY

The one-body density matrix elements have been tabulated for the ground state transitions, and also for the ground to low-lying excited state transitions in ^{6}Li and ^{7}Li. The effect of increasing the model space from $0\hbar\omega$ to $(0 + 2 + 4)\hbar\omega$ has been considered, with

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the increase being necessary to incorporate microscopically the effects of core polarisation. Those OBDME as tabulated are appropriate for use in calculations of elastic and inelastic scattering.

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TABLES

TABLE I. The low-energy spectra of ^{6}Li and ^{7}Li as calculated in the $0\hbar\omega$ (CK and Zheng interactions), $(0+2)\hbar\omega$ (MK3W and Zheng interactions), and $(0+2+4)\hbar\omega$ (Zheng interaction) shell models. The measured energies were obtained from Ref. [8]. All energies are in MeV.

State number	$J^\pi;T$	Expt.	$0\hbar\omega$		$(0+2)\hbar\omega$		$(0+2+4)\hbar\omega$
			(CK)	(Zheng)	(MK3W)	(Zheng)	(Zheng)
(^{6}Li) 1	$1^+;0$	0.000	0.000	0.000	0.000	0.000	0.000
2	$3^+;0$	2.186	2.144	2.991	2.645	2.876	2.521
3	$0^+;1$	3.563	2.508	3.718	1.856	3.578	3.380
(^{7}Li) 4	$\frac{3}{2}^-;\frac{1}{2}$	0.000	0.000	0.000	0.000	0.000	0.000
5	$\frac{1}{2}^-$	0.478	1.068	0.115	0.525	0.472	0.478
6	$\frac{7}{2}^-$	4.630	4.794	5.103	5.713	5.871	5.391

TABLE II. Nomenclature used for $j_2 : j_1$ in specifying $S_{j_2 j_1 J}$. O specifies the orbital, L is the label.

O	L	O	L	O	L	O	L	O	L	O	L
$0s_{\frac{1}{2}}$	1	$0p_{\frac{3}{2}}$	2	$0d_{\frac{5}{2}}$	4	$0f_{\frac{7}{2}}$	7	$0g_{\frac{9}{2}}$	11	$0h_{\frac{11}{2}}$	16
		$0p_{\frac{1}{2}}$	3	$0d_{\frac{3}{2}}$	5	$0f_{\frac{5}{2}}$	8	$0g_{\frac{7}{2}}$	12	$0h_{\frac{9}{2}}$	17
				$1s_{\frac{1}{2}}$	6	$1p_{\frac{3}{2}}$	9	$1d_{\frac{5}{2}}$	13	$1f_{\frac{7}{2}}$	18
						$1p_{\frac{1}{2}}$	10	$1d_{\frac{3}{2}}$	14	$1f_{\frac{5}{2}}$	19
								$2s_{\frac{1}{2}}$	15	$2p_{\frac{3}{2}}$	20
										$2p_{\frac{1}{2}}$	21

TABLE III. Proton occupation numbers for the states in ^{6}Li.

Orbit	g.s.			$3^+;0$			$0^+;1$		
	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$
1	2.000	1.902	1.854	2.000	1.896	1.855	2.000	1.900	1.854
2	0.717	0.733	0.734	1.000	0.982	0.967	0.880	0.883	0.877
3	0.283	0.298	0.277	0.000	0.054	0.050	0.120	0.157	0.149
4		0.017	0.026		0.015	0.018		0.015	0.020
5		0.021	0.032		0.016	0.024		0.018	0.027
6		0.027	0.032		0.032	0.035		0.029	0.033
7		0.000	0.004		0.007	0.008		0.000	0.003
8		0.003	0.011		0.000	0.005		0.000	0.004
9		0.0005	0.010		0.001	0.010		0.000	0.010
10		0.000	0.008		0.000	0.008		0.000	0.008
11			0.000			0.0005			0.000
12			0.002			0.002			0.0005
13			0.003			0.004			0.004
14			0.003			0.003			0.003
15			0.006			0.007			0.007
16			0.000			0.000			0.000
17			0.000			0.001			0.000
18			0.000			0.0005			0.000
19			0.000			0.000			0.000
20			0.002			0.005			0.004
21			0.0005			0.000			0.000

TABLE IV. Proton occupation numbers for the states in ^{7}Li.

Orbit	g.s.			$\frac{1}{2}^-$			$\frac{7}{2}^-$		
	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$	$0\hbar\omega$	$(0+2)\hbar\omega$	$(0+2+4)\hbar\omega$
1	2.000	1.894	1.842	2.000	1.894	1.843	2.000	1.895	1.849
2	0.780	0.809	0.801	0.560	0.570	0.571	1.000	0.968	0.958
3	0.200	0.207	0.203	0.440	0.448	0.432	0.000	0.049	0.050
4		0.029	0.038		0.028	0.038		0.024	0.028
5		0.030	0.043		0.032	0.045		0.022	0.031
6		0.021	0.027		0.021	0.027		0.027	0.030
7		0.005	0.009		0.000	0.004		0.010	0.011
8		0.002	0.009		0.005	0.001		0.001	0.006
9		0.002	0.009		0.002	0.009		0.004	0.010
10		0.001	0.005		0.000	0.006		0.000	0.006
11			0.000			0.000			0.001
12			0.001			0.002			0.002
13			0.003			0.003			0.004
14			0.004			0.004			0.003
15			0.003			0.003			0.005
16			0.000			0.000			0.000
17			0.000			0.000			0.001
18			0.001			0.000			0.001
19			0.000			0.000			0.000
20			0.002			0.001			0.004
21			0.000			0.001			0.000

TABLE V. Neutron occupation numbers for the states in ^{7}Li.

Orbit	g.s. $0\hbar\omega$	g.s. $(0+2)\hbar\omega$	g.s. $(0+2+4)\hbar\omega$	$\frac{1}{2}^-$ $0\hbar\omega$	$\frac{1}{2}^-$ $(0+2)\hbar\omega$	$\frac{1}{2}^-$ $(0+2+4)\hbar\omega$	$\frac{7}{2}^-$ $0\hbar\omega$	$\frac{7}{2}^-$ $(0+2)\hbar\omega$	$\frac{7}{2}^-$ $(0+2+4)\hbar\omega$
1	2.000	1.917	1.872	2.000	1.916	1.872	2.000	1.915	1.875
2	1.517	1.525	1.505	1.615	1.559	1.540	1.549	1.562	1.547
3	0.483	0.472	0.459	0.385	0.436	0.419	0.451	0.430	0.414
4		0.024	0.034		0.023	0.035		0.021	0.026
5		0.027	0.041		0.029	0.042		0.024	0.033
6		0.020	0.027		0.021	0.027		0.026	0.031
7		0.007	0.012		0.005	0.011		0.012	0.013
8		0.005	0.013		0.007	0.015		0.006	0.011
9		0.002	0.011		0.003	0.011		0.004	0.012
10		0.000	0.007		0.002	0.007		0.000	0.009
11			0.000			0.000			0.001
12			0.002			0.002			0.002
13			0.004			0.004			0.005
14			0.004			0.003			0.004
15			0.005			0.005			0.007
16			0.000			0.000			0.000
17			0.000			0.000			0.001
18			0.001			0.000			0.001
19			0.000			0.001			0.000
20			0.004			0.004			0.007
21			0.000			0.000			0.001

TABLE VI. OBDME for the ground state transition for ^{6}Li, as obtained using the CK interaction.

$J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.4495,	2.4495
3,	3,	0.4227,	0.4227
2,	2,	0.5672,	0.5672

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
3,	3,	−0.2775,	−0.2775
3,	2,	0.4027,	0.4027
2,	3,	−0.4027,	−0.4027
2,	2,	0.6355,	0.6355

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
3,	2,	−0.3023,	−0.3023
2,	3,	0.3023,	0.3023
2,	2,	0.1129,	0.1129

TABLE VII. As for Table VI, but using the MK3W interaction.

$J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.3665,	2.3665
1,	6,	-0.1102,	-0.1102
2,	2,	0.5015,	0.5015
2,	9,	-0.0738,	-0.0738
3,	3,	0.4962,	0.4962
3,	10,	-0.0840,	-0.0840
4,	4,	0.0147,	0.0147
5,	5,	0.0153,	0.0153
6,	1,	-0.1102,	-0.1102
6,	6,	0.0196,	0.0196
9,	2,	-0.0738,	-0.0738
9,	9,	0.0132,	0.0132
10,	3,	-0.0840,	-0.0840
10,	10,	0.0169,	0.0169

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	-0.0072,	-0.0072
1,	5,	-0.0012,	-0.0012
1,	6,	-0.0581,	-0.0581
2,	2,	0.5918,	0.5918
2,	3,	-0.2517,	-0.2517
2,	8,	-0.0033,	-0.0033
2,	9,	-0.0933,	-0.0933
2,	10,	0.0391,	0.0391
3,	2,	0.2517,	0.2517
3,	3,	-0.2232,	-0.2232
3,	9,	-0.0347,	-0.0347
3,	10,	0.0361,	0.0361
4,	4,	0.0063,	0.0063
4,	5,	-0.0027,	-0.0027
5,	1,	0.0012,	0.0012
5,	4,	0.0027,	0.0027
5,	5,	-0.0030,	-0.0030
5,	6,	-0.0025,	-0.0025
6,	1,	-0.0581,	-0.0581
6,	5,	0.0025,	0.0025
6,	6,	0.0154,	0.0154
8,	2,	0.0033,	0.0033
8,	9,	-0.0006,	-0.0006

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j2	j1	Sjj(p)	Sjj(n)
9,	2,	−0.0933,	−0.0933
9,	3,	0.0347,	0.0347
9,	8,	0.0006,	0.0006
9,	9,	0.0170,	0.0170
9,	10,	−0.0060,	−0.0060
10,	2,	−0.0391,	−0.0391
10,	3,	0.0361,	0.0361
10,	9,	0.0060,	0.0060
10,	10,	−0.0064,	−0.0064

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	−0.0997,	−0.0997
1,	5,	−0.0894,	−0.0894
2,	2,	0.2797,	0.2797
2,	3,	0.4030,	0.4030
2,	8,	−0.0051,	−0.0051
2,	9,	−0.0466,	−0.0466
2,	10,	−0.0769,	−0.0769
3,	2,	−0.4030,	−0.4030
3,	8,	−0.0081,	−0.0081
3,	9,	0.0617,	0.0617
4,	1,	−0.0997,	−0.0997
4,	4,	0.0078,	0.0078
4,	5,	0.0048,	0.0048
4,	6,	0.0089,	0.0089
5,	1,	0.0894,	0.0894
5,	4,	−0.0048,	−0.0048
5,	5,	0.0070,	0.0070
5,	6,	−0.0081,	−0.0081
6,	4,	0.0089,	0.0089
6,	5,	0.0081,	0.0081
8,	2,	0.0051,	0.0051
8,	3,	−0.0081,	−0.0081
8,	9,	−0.0008,	−0.0008
8,	10,	0.0016,	0.0016
9,	2,	−0.0466,	−0.0466
9,	3,	−0.0617,	−0.0617
9,	8,	0.0008,	0.0008
9,	9,	0.0093,	0.0093
9,	10,	0.0137,	0.0137
10,	2,	0.0769,	0.0769
10,	8,	0.0016,	0.0016
10,	9,	−0.0137,	−0.0137

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TABLE VIII. As for Table VI, but using the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space. $J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.2700,	2.2700
1,	6,	0.1501,	0.1501
1,	15,	0.1016,	0.1016
2,	2,	0.6352,	0.6352
2,	9,	0.0055,	0.0055
2,	20,	0.0294,	0.0294
3,	3,	0.3385,	0.3385
3,	10,	-0.0018,	-0.0018
3,	21,	0.0089,	0.0089
4,	4,	0.0179,	0.0179
4,	13,	0.0026,	0.0026
5,	5,	0.0277,	0.0277
5,	14,	0.0044,	0.0044
6,	1,	0.1501,	0.1501
6,	6,	0.0388,	0.0388
6,	15,	0.0071,	0.0071
7,	7,	0.0025,	0.0025
8,	8,	0.0074,	0.0074
9,	2,	0.0055,	0.0055
9,	9,	0.0088,	0.0088
9,	20,	-0.0004,	-0.0004
10,	3,	-0.0018,	-0.0018
10,	10,	0.0096,	0.0096
10,	21,	-0.0005,	-0.0005
12,	12,	0.0012,	0.0012
13,	4,	0.0026,	0.0026
13,	13,	0.0018,	0.0018
14,	5,	0.0044,	0.0044
14,	14,	0.0023,	0.0023
15,	1,	0.1016,	0.1016
15,	6,	0.0071,	0.0071
15,	15,	0.0067,	0.0067
20,	2,	0.0294,	0.0294
20,	9,	-0.0004,	-0.0004
20,	20,	0.0018,	0.0018
21,	3,	0.0089,	0.0089
21,	10,	-0.0005,	-0.0005
21,	21,	0.0005,	0.0005

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	0.0080,	0.0080
1,	5,	0.0146,	0.0146
1,	6,	-0.0511,	-0.0511
1,	14,	-0.0137,	-0.0137
1,	15,	0.0174,	0.0174
2,	2,	0.5760,	0.5760
2,	3,	-0.4650,	-0.4650
2,	8,	0.0280,	0.0280
2,	9,	-0.0063,	-0.0063
2,	10,	0.0267,	0.0267
2,	19,	-0.0009,	-0.0009
2,	20,	0.0261,	0.0261
2,	21,	-0.0172,	-0.0172
3,	2,	0.4650,	0.4650
3,	3,	-0.1886,	-0.1886
3,	9,	-0.0071,	-0.0071
3,	10,	0.0139,	0.0139
3,	20,	0.0261,	0.0261
3,	21,	-0.0046,	-0.0046
4,	4,	0.0045,	0.0045
4,	5,	0.0004,	0.0004
4,	12,	0.0017,	0.0017
4,	14,	0.0011,	0.0011
5,	1,	-0.0146,	-0.0146
5,	4,	-0.0004,	-0.0004
5,	5,	-0.0021,	-0.0021
5,	6,	-0.0007,	-0.0007
5,	13,	-0.0018,	-0.0018
5,	14,	-0.0008,	-0.0008
5,	15,	-0.0012,	-0.0012
6,	1,	-0.0511,	-0.0511
6,	5,	0.0007,	0.0007
6,	6,	0.0006,	0.0006
6,	14,	-0.0012,	-0.0012
6,	15,	-0.0037,	-0.0037
7,	7,	0.0027,	0.0027
7,	8,	-0.0006,	-0.0006
8,	2,	-0.0280,	-0.0280
8,	7,	0.0006,	0.0006
8,	8,	0.0036,	0.0036
8,	9,	0.0006,	0.0006
8,	20,	-0.0018,	-0.0018

j2	j1	Sjj(p)	Sjj(n)
9,	2,	-0.0063,	-0.0063
9,	3,	0.0071,	0.0071
9,	8,	-0.0006,	-0.0006
9,	10,	-0.0019,	-0.0019
9,	20,	-0.0003,	-0.0003
9,	21,	0.0002,	0.0002
10,	2,	-0.0267,	-0.0267
10,	3,	0.0139,	0.0139
10,	9,	0.0019,	0.0019
10,	10,	0.0016,	0.0016
10,	20,	-0.0014,	-0.0014
10,	21,	0.0001,	0.0001
12,	4,	-0.0017,	-0.0017
12,	12,	0.0014,	0.0014
13,	5,	0.0018,	0.0018
13,	13,	0.0005,	0.0005
14,	1,	0.0137,	0.0137
14,	4,	-0.0011,	-0.0011
14,	5,	-0.0008,	-0.0008
14,	6,	0.0012,	0.0012
14,	15,	0.0012,	0.0012
15,	1,	0.0174,	0.0174
15,	5,	0.0012,	0.0012
15,	6,	-0.0037,	-0.0037
15,	14,	-0.0012,	-0.0012
15,	15,	0.0018,	0.0018
19,	2,	0.0009,	0.0009
20,	2,	0.0261,	0.0261
20,	3,	-0.0261,	-0.0261
20,	8,	0.0018,	0.0018
20,	9,	-0.0003,	-0.0003
20,	10,	0.0014,	0.0014
20,	20,	0.0015,	0.0015
20,	21,	-0.0011,	-0.0011
21,	2,	0.0172,	0.0172
21,	3,	-0.0046,	-0.0046
21,	9,	-0.0002,	-0.0002
21,	10,	0.0001,	0.0001
21,	20,	0.0011,	0.0011

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.0134,	-0.0134
1,	5,	0.0009,	0.0009

```
1, 13,        -0.0031,        -0.0031
1, 14,        -0.0068,        -0.0068
2,  2,        -0.1420,        -0.1420
2,  3,         0.1495,         0.1495
2,  7,         0.0028,         0.0028
2,  8,         0.0434,         0.0434
2,  9,         0.0105,         0.0105
2, 10,         0.0021,         0.0021
2, 19,        -0.0013,        -0.0013
2, 20,        -0.0148,        -0.0148
2, 21,        -0.0053,        -0.0053
3,  2,        -0.1495,        -0.1495
3,  8,         0.0389,         0.0389
3,  9,         0.0039,         0.0039
3, 19,        -0.0012,        -0.0012
3, 20,        -0.0092,        -0.0092
4,  1,        -0.0134,        -0.0134
4,  4,         0.0042,         0.0042
4,  5,         0.0023,         0.0023
4,  6,         0.0045,         0.0045
4, 13,         0.0005,         0.0005
4, 14,         0.0006,         0.0006
4, 15,         0.0005,         0.0005
5,  1,        -0.0009,        -0.0009
5,  4,        -0.0023,        -0.0023
5,  5,         0.0045,         0.0045
5,  6,        -0.0022,        -0.0022
5, 12,         0.0028,         0.0028
5, 13,         0.0002,         0.0002
5, 14,         0.0006,         0.0006
5, 15,        -0.0007,        -0.0007
6,  4,         0.0045,         0.0045
6,  5,         0.0022,         0.0022
6, 13,         0.0002,         0.0002
6, 14,         0.0023,         0.0023
7,  2,         0.0028,         0.0028
7,  7,         0.0012,         0.0012
7,  8,         0.0007,         0.0007
7,  9,         0.0023,         0.0023
8,  2,        -0.0434,        -0.0434
8,  3,         0.0389,         0.0389
8,  7,        -0.0007,        -0.0007
8,  8,         0.0047,         0.0047
8,  9,         0.0002,         0.0002
8, 10,        -0.0007,        -0.0007
```

```
 8, 20,      -0.0027,      -0.0027
 8, 21,       0.0012,       0.0012
 9,  2,       0.0105,       0.0105
 9,  3,      -0.0039,      -0.0039
 9,  7,       0.0023,       0.0023
 9,  8,      -0.0002,      -0.0002
 9,  9,       0.0008,       0.0008
 9, 10,       0.0009,       0.0009
 9, 20,       0.0006,       0.0006
 9, 21,      -0.0001,      -0.0001
10,  2,      -0.0021,      -0.0021
10,  8,      -0.0007,      -0.0007
10,  9,      -0.0009,      -0.0009
10, 20,       0.0003,       0.0003
12,  5,       0.0028,       0.0028
12, 12,       0.0007,       0.0007
12, 13,       0.0007,       0.0007
12, 14,       0.0004,       0.0004
13,  1,      -0.0031,      -0.0031
13,  4,       0.0005,       0.0005
13,  5,      -0.0002,      -0.0002
13,  6,       0.0002,       0.0002
13, 12,      -0.0007,      -0.0007
13, 13,      -0.0007,      -0.0007
13, 15,      -0.0003,      -0.0003
14,  1,       0.0068,       0.0068
14,  4,      -0.0006,      -0.0006
14,  5,       0.0006,       0.0006
14,  6,      -0.0023,      -0.0023
14, 12,       0.0004,       0.0004
14, 14,       0.0002,       0.0002
14, 15,       0.0004,       0.0004
15,  4,       0.0005,       0.0005
15,  5,       0.0007,       0.0007
15, 13,      -0.0003,      -0.0003
15, 14,      -0.0004,      -0.0004
19,  2,       0.0013,       0.0013
19,  3,      -0.0012,      -0.0012
20,  2,      -0.0148,      -0.0148
20,  3,       0.0092,       0.0092
20,  8,       0.0027,       0.0027
20,  9,       0.0006,       0.0006
20, 10,      -0.0003,      -0.0003
20, 20,      -0.0013,      -0.0013
20, 21,      -0.0001,      -0.0001
```

```
21,  2,        0.0053,        0.0053
21,  8,        0.0012,        0.0012
21,  9,        0.0001,        0.0001
21, 20,        0.0001,        0.0001
```

TABLE IX. OBDME for the ground to the $3^+;0$ (2.186 MeV) transition in ^{6}Li, as obtained using the CK interaction.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
2,	3,	1.3299,	1.3299
2,	2,	0.5779,	0.5779

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	1.1557,	1.1557

TABLE X. As for Table IX, but using the MK3W interaction.

$J = 2$

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.1431,	0.1431
1,	5,	0.1641,	0.1641
2,	2,	-0.4449,	-0.4449
2,	3,	-1.2954,	-1.2954
2,	8,	0.0020,	0.0020
2,	9,	0.0640,	0.0640
2,	10,	0.2253,	0.2253
3,	2,	0.0132,	0.0132
4,	1,	0.2249,	0.2249
4,	4,	-0.0115,	-0.0115
4,	5,	-0.0107,	-0.0107
4,	6,	-0.0260,	-0.0260
5,	1,	-0.1310,	-0.1310
5,	4,	0.0051,	0.0051
5,	5,	-0.0115,	-0.0115
5,	6,	0.0040,	0.0040
6,	4,	-0.0039,	-0.0039
6,	5,	-0.0141,	-0.0141
7,	2,	0.1036,	0.1036
7,	8,	-0.0005,	-0.0005
7,	9,	-0.0187,	-0.0187
8,	2,	0.0065,	0.0065
8,	3,	-0.0004,	-0.0004
8,	9,	-0.0012,	-0.0012
8,	10,	0.0003,	0.0003
9,	2,	0.0746,	0.0746
9,	3,	0.2224,	0.2224
9,	8,	-0.0004,	-0.0004
9,	9,	-0.0123,	-0.0123
9,	10,	-0.0434,	-0.0434

$J = 3$

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.0258,	0.0258
2,	2,	-0.8607,	-0.8607
2,	8,	0.0075,	0.0075
2,	9,	0.1281,	0.1281
4,	1,	0.0451,	0.0451
4,	4,	-0.0061,	-0.0061
4,	5,	0.0001,	0.0001

4,	6,	-0.0126,	-0.0126
5,	4,	-0.0016,	-0.0016
5,	5,	0.0020,	0.0020
6,	4,	-0.0067,	-0.0067
7,	2,	0.0749,	0.0749
7,	3,	-0.0324,	-0.0324
7,	8,	-0.0007,	-0.0007
7,	9,	-0.0139,	-0.0139
7,	10,	0.0054,	0.0054
8,	2,	0.0097,	0.0097
8,	3,	-0.0072,	-0.0072
8,	9,	-0.0018,	-0.0018
8,	10,	0.0016,	0.0016
9,	2,	0.1491,	0.1491
9,	8,	-0.0014,	-0.0014
9,	9,	-0.0247,	-0.0247

$J = 4$:

j2	j1	Sjj(p)	Sjj(n)
2,	8,	0.0189,	0.0189
4,	4,	-0.0057,	-0.0057
4,	5,	-0.0115,	-0.0115
5,	4,	0.0067,	0.0067
7,	2,	0.0281,	0.0281
7,	3,	0.0682,	0.0682
7,	8,	-0.0007,	-0.0007
7,	9,	-0.0059,	-0.0059
7,	10,	-0.0150,	-0.0150
8,	2,	0.0095,	0.0095
8,	9,	-0.0018,	-0.0018
9,	8,	-0.0036,	-0.0036

TABLE XI. As for Table IX, but using the Zheng interaction in the $(0 + 2 + 4)\hbar\omega$ space.
$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	−0.1296,	−0.1296
1,	5,	−0.1428,	−0.1428
1,	13,	−0.0313,	−0.0313
1,	14,	−0.0309,	−0.0309
2,	2,	0.6613,	0.6613
2,	3,	1.0690,	1.0690
2,	7,	−0.0017,	−0.0017
2,	8,	0.0059,	0.0059
2,	9,	−0.0094,	−0.0094
2,	10,	−0.0533,	−0.0533
2,	19,	−0.0003,	−0.0003
2,	20,	0.0370,	0.0370
2,	21,	0.0299,	0.0299
3,	2,	−0.0120,	−0.0120
3,	8,	−0.0112,	−0.0112
3,	9,	−0.0010,	−0.0010
4,	1,	−0.1666,	−0.1666
4,	4,	0.0100,	0.0100
4,	5,	0.0032,	0.0032
4,	6,	−0.0051,	−0.0051
4,	12,	0.0007,	0.0007
4,	13,	0.0014,	0.0014
4,	14,	0.0004,	0.0004
4,	15,	−0.0083,	−0.0083
5,	1,	0.1357,	0.1357
5,	4,	−0.0079,	−0.0079
5,	5,	0.0140,	0.0140
5,	6,	0.0041,	0.0041
5,	12,	−0.0004,	−0.0004
5,	13,	−0.0023,	−0.0023
5,	14,	0.0037,	0.0037
5,	15,	0.0039,	0.0039
6,	4,	−0.0127,	−0.0127
6,	5,	−0.0079,	−0.0079
6,	13,	−0.0039,	−0.0039
6,	14,	−0.0041,	−0.0041
7,	2,	−0.0963,	−0.0963
7,	7,	0.0014,	0.0014
7,	8,	−0.0013,	−0.0013
7,	9,	0.0007,	0.0007
7,	20,	−0.0044,	−0.0044

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8,	2,	0.0074,	0.0074
8,	3,	0.0028,	0.0028
8,	8,	0.0030,	0.0030
8,	9,	-0.0006,	-0.0006
8,	10,	-0.0002,	-0.0002
8,	20,	0.0005,	0.0005
9,	2,	-0.0060,	-0.0060
9,	3,	-0.0168,	-0.0168
9,	7,	-0.0004,	-0.0004
9,	9,	0.0037,	0.0037
9,	10,	0.0034,	0.0034
9,	20,	-0.0006,	-0.0006
9,	21,	-0.0005,	-0.0005
10,	2,	-0.0047,	-0.0047
10,	8,	-0.0022,	-0.0022
10,	9,	-0.0016,	-0.0016
11,	4,	-0.0024,	-0.0024
11,	12,	-0.0002,	-0.0002
11,	13,	-0.0008,	-0.0008
12,	4,	0.0012,	0.0012
12,	5,	-0.0019,	-0.0019
12,	12,	0.0006,	0.0006
12,	14,	0.0002,	0.0002
13,	1,	-0.0197,	-0.0197
13,	4,	0.0020,	0.0020
13,	5,	-0.0012,	-0.0012
13,	6,	-0.0043,	-0.0043
13,	13,	0.0015,	0.0015
13,	15,	-0.0008,	-0.0008
14,	1,	0.0342,	0.0342
14,	4,	-0.0025,	-0.0025
14,	5,	0.0039,	0.0039
14,	6,	-0.0004,	-0.0004
14,	12,	-0.0001,	-0.0001
14,	13,	-0.0006,	-0.0006
14,	14,	0.0023,	0.0023
14,	15,	-0.0002,	-0.0002
15,	4,	-0.0062,	-0.0062
15,	5,	-0.0066,	-0.0066
15,	13,	-0.0015,	-0.0015
15,	14,	-0.0009,	-0.0009
17,	8,	-0.0025,	-0.0025
18,	2,	-0.0316,	-0.0316
18,	8,	-0.0006,	-0.0006
18,	9,	0.0002,	0.0002

```
18, 20,      -0.0017,      -0.0017
19,  2,       0.0010,       0.0010
19,  3,      -0.0012,      -0.0012
19,  8,      -0.0001,      -0.0001
19, 21,       0.0002,       0.0002
20,  2,       0.0431,       0.0431
20,  3,       0.0712,       0.0712
20,  8,       0.0008,       0.0008
20,  9,      -0.0009,      -0.0009
20, 10,      -0.0036,      -0.0036
20, 20,       0.0029,       0.0029
20, 21,       0.0024,       0.0024
```

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.0010,	-0.0010
1,	12,	-0.0304,	-0.0304
1,	13,	0.0283,	0.0283
2,	2,	1.3043,	1.3043
2,	7,	-0.0033,	-0.0033
2,	8,	0.0440,	0.0440
2,	9,	-0.0223,	-0.0223
2,	19,	-0.0013,	-0.0013
2,	20,	0.0739,	0.0739
3,	7,	-0.0034,	-0.0034
3,	8,	0.0011,	0.0011
4,	1,	-0.0189,	-0.0189
4,	4,	0.0045,	0.0045
4,	5,	-0.0010,	-0.0010
4,	6,	0.0013,	0.0013
4,	12,	0.0012,	0.0012
4,	13,	-0.0002,	-0.0002
4,	14,	0.0012,	0.0012
4,	15,	-0.0035,	-0.0035
5,	4,	-0.0027,	-0.0027
5,	5,	-0.0013,	-0.0013
5,	12,	-0.0011,	-0.0011
5,	13,	-0.0007,	-0.0007
5,	14,	-0.0007,	-0.0007
6,	4,	0.0007,	0.0007
6,	12,	-0.0024,	-0.0024
6,	13,	-0.0008,	-0.0008
7,	2,	-0.0619,	-0.0619
7,	3,	0.0405,	0.0405

7,	7,	0.0019,	0.0019
7,	8,	−0.0035,	−0.0035
7,	9,	−0.0013,	−0.0013
7,	10,	−0.0039,	−0.0039
7,	20,	−0.0023,	−0.0023
7,	21,	0.0022,	0.0022
8,	2,	0.0037,	0.0037
8,	3,	−0.0105,	−0.0105
8,	7,	−0.0002,	−0.0002
8,	8,	0.0018,	0.0018
8,	10,	0.0002,	0.0002
8,	20,	0.0003,	0.0003
8,	21,	−0.0005,	−0.0005
9,	2,	−0.0185,	−0.0185
9,	7,	0.0004,	0.0004
9,	8,	0.0002,	0.0002
9,	9,	0.0031,	0.0031
9,	20,	−0.0012,	−0.0012
10,	7,	0.0001,	0.0001
10,	8,	0.0003,	0.0003
11,	4,	−0.0018,	−0.0018
11,	5,	−0.0002,	−0.0002
11,	12,	−0.0002,	−0.0002
11,	13,	−0.0006,	−0.0006
11,	14,	−0.0001,	−0.0001
12,	1,	0.0378,	0.0378
12,	4,	−0.0009,	−0.0009
12,	5,	−0.0030,	−0.0030
12,	6,	0.0015,	0.0015
12,	12,	0.0009,	0.0009
12,	13,	−0.0002,	−0.0002
12,	14,	0.0002,	0.0002
12,	15,	0.0030,	0.0030
13,	1,	0.0296,	0.0296
13,	4,	0.0007,	0.0007
13,	5,	0.0012,	0.0012
13,	6,	−0.0004,	−0.0004
13,	13,	0.0012,	0.0012
13,	14,	−0.0004,	−0.0004
13,	15,	0.0020,	0.0020
14,	4,	−0.0017,	−0.0017
14,	5,	−0.0016,	−0.0016
14,	12,	−0.0003,	−0.0003
14,	13,	0.0001,	0.0001
15,	4,	−0.0011,	−0.0011

j2	j1	Sjj(p)	Sjj(n)
15,	12,	−0.0016,	−0.0016
15,	13,	0.0024,	0.0024
17,	2,	0.0283,	0.0283
17,	8,	−0.0022,	−0.0022
17,	9,	−0.0006,	−0.0006
17,	20,	0.0019,	0.0019
18,	2,	−0.0222,	−0.0222
18,	3,	0.0117,	0.0117
18,	8,	−0.0008,	−0.0008
18,	10,	−0.0008,	−0.0008
18,	20,	−0.0010,	−0.0010
18,	21,	0.0008,	0.0008
19,	2,	0.0052,	0.0052
19,	3,	0.0039,	0.0039
19,	8,	−0.0002,	−0.0002
19,	10,	−0.0003,	−0.0003
19,	20,	0.0002,	0.0002
19,	21,	0.0004,	0.0004
20,	2,	0.0862,	0.0862
20,	8,	0.0030,	0.0030
20,	9,	−0.0018,	−0.0018
20,	20,	0.0059,	0.0059

$J = 4$:

j2	j1	Sjj(p)	Sjj(n)
1,	11,	−0.0002,	−0.0002
1,	12,	−0.0074,	−0.0074
2,	7,	0.0010,	0.0010
2,	8,	0.1070,	0.1070
2,	19,	−0.0032,	−0.0032
3,	7,	0.0006,	0.0006
4,	4,	0.0036,	0.0036
4,	5,	0.0014,	0.0014
4,	12,	0.0003,	0.0003
4,	13,	0.0004,	0.0004
4,	14,	0.0012,	0.0012
5,	4,	−0.0077,	−0.0077
5,	12,	0.0009,	0.0009
5,	13,	−0.0009,	−0.0009
6,	12,	0.0021,	0.0021
7,	2,	−0.0078,	−0.0078
7,	3,	−0.0122,	−0.0122
7,	7,	0.0010,	0.0010
7,	8,	−0.0024,	−0.0024

7,	9,	-0.0007,	-0.0007
7,	10,	-0.0010,	-0.0010
7,	20,	0.0005,	0.0005
7,	21,	0.0014,	0.0014
8,	2,	-0.0165,	-0.0165
8,	7,	-0.0008,	-0.0008
8,	8,	0.0028,	0.0028
8,	9,	-0.0013,	-0.0013
8,	20,	-0.0010,	-0.0010
9,	7,	0.0015,	0.0015
9,	8,	0.0013,	0.0013
10,	7,	-0.0009,	-0.0009
11,	1,	0.0004,	0.0004
11,	4,	-0.0011,	-0.0011
11,	5,	-0.0009,	-0.0009
11,	6,	-0.0021,	-0.0021
11,	12,	-0.0002,	-0.0002
11,	13,	-0.0004,	-0.0004
11,	14,	-0.0003,	-0.0003
11,	15,	-0.0005,	-0.0005
12,	1,	0.0128,	0.0128
12,	4,	0.0001,	0.0001
12,	5,	0.0002,	0.0002
12,	6,	-0.0030,	-0.0030
12,	12,	0.0006,	0.0006
12,	13,	0.0010,	0.0010
12,	15,	0.0016,	0.0016
13,	4,	0.0009,	0.0009
13,	5,	0.0020,	0.0020
13,	12,	-0.0005,	-0.0005
13,	13,	-0.0004,	-0.0004
13,	14,	-0.0005,	-0.0005
14,	4,	-0.0025,	-0.0025
14,	12,	0.0004,	0.0004
14,	13,	0.0003,	0.0003
15,	12,	-0.0001,	-0.0001
17,	2,	0.0313,	0.0313
17,	3,	-0.0312,	-0.0312
17,	8,	-0.0014,	-0.0014
17,	9,	-0.0007,	-0.0007
17,	10,	0.0016,	0.0016
17,	20,	0.0021,	0.0021
17,	21,	-0.0010,	-0.0010
18,	2,	-0.0074,	-0.0074
18,	3,	-0.0019,	-0.0019

```
18,  8,      -0.0008,      -0.0008
18,  9,      -0.0003,      -0.0003
18, 10,      -0.0003,      -0.0003
18, 21,       0.0007,       0.0007
19,  2,       0.0148,       0.0148
19,  8,      -0.0003,      -0.0003
19, 20,       0.0007,       0.0007
20,  8,       0.0077,       0.0077
20, 19,      -0.0003,      -0.0003
```

TABLE XII. OBDME for the ground to the $0^+; 1$ (3.563 MeV) transition in ^{6}Li, as obtained using the CK interaction.

j2	j1	Sjj(p)	Sjj(n)
3,	3,	−0.0619,	0.0619
3,	2,	−0.3966,	0.3966
2,	3,	0.4172,	−0.4172
2,	2,	−0.4053,	0.4053

TABLE XIII. As for Table XII, but using the MK3W interaction.

j2	j1	Sjj(p)	Sjj(n)
1,	1,	0.0066,	-0.0066
1,	5,	-0.0119,	0.0119
1,	6,	0.0674,	-0.0674
2,	2,	-0.2720,	0.2720
2,	3,	0.3606,	-0.3606
2,	8,	-0.0056,	0.0056
2,	9,	0.0392,	-0.0392
2,	10,	-0.0617,	0.0617
3,	2,	-0.4836,	0.4836
3,	3,	-0.1638,	0.1638
3,	9,	0.0779,	-0.0779
3,	10,	0.0351,	-0.0351
4,	4,	-0.0010,	0.0010
4,	5,	0.0026,	-0.0026
5,	1,	0.0059,	-0.0059
5,	4,	-0.0032,	0.0032
5,	5,	-0.0006,	0.0006
5,	6,	-0.0039,	0.0039
6,	1,	0.0631,	-0.0631
6,	5,	0.0057,	-0.0057
6,	6,	-0.0144,	0.0144
9,	2,	0.0456,	-0.0456
9,	3,	-0.0609,	0.0609
9,	8,	0.0011,	-0.0011
9,	9,	-0.0076,	0.0076
9,	10,	0.0119,	-0.0119
10,	2,	0.0988,	-0.0988
10,	3,	0.0346,	-0.0346
10,	9,	-0.0184,	0.0184
10,	10,	-0.0083,	0.0083

TABLE XIV. As for Table XII, but using the Zheng interaction as defined in the $(0+2+4)\hbar\omega$ model space.

j2	j1	Sjj(p)	Sjj(n)
1,	1,	-0.0202,	0.0202
1,	5,	0.0073,	-0.0073
1,	6,	0.0519,	-0.0519
1,	14,	-0.0084,	0.0084
1,	15,	-0.0110,	0.0110
2,	2,	-0.5276,	0.5276
2,	3,	0.3842,	-0.3842
2,	8,	0.0402,	-0.0402
2,	9,	0.0087,	-0.0087
2,	10,	-0.0198,	0.0198
2,	19,	-0.0012,	0.0012
2,	20,	-0.0296,	0.0296
2,	21,	0.0107,	-0.0107
3,	2,	-0.2025,	0.2025
3,	3,	0.0267,	-0.0267
3,	9,	-0.0006,	0.0006
3,	10,	-0.0020,	0.0020
3,	20,	-0.0075,	0.0075
3,	21,	0.0046,	-0.0046
4,	4,	0.0009,	-0.0009
4,	5,	0.0011,	-0.0011
4,	12,	0.0002,	-0.0002
4,	13,	0.0009,	-0.0009
5,	1,	0.0002,	-0.0002
5,	4,	-0.0026,	0.0026
5,	5,	-0.0021,	0.0021
5,	6,	-0.0031,	0.0031
5,	14,	-0.0010,	0.0010
5,	15,	-0.0010,	0.0010
6,	1,	0.0512,	-0.0512
6,	5,	0.0017,	-0.0017
6,	6,	0.0023,	-0.0023
6,	14,	0.0007,	-0.0007
6,	15,	0.0028,	-0.0028
7,	7,	-0.0006,	0.0006
7,	8,	0.0011,	-0.0011
8,	2,	-0.0006,	0.0006
8,	7,	-0.0010,	0.0010
8,	8,	0.0003,	-0.0003
8,	9,	-0.0006,	0.0006
9,	2,	0.0201,	-0.0201

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9,	3,	−0.0158,	0.0158
9,	8,	−0.0016,	0.0016
9,	9,	−0.0019,	0.0019
9,	10,	0.0016,	−0.0016
9,	20,	0.0013,	−0.0013
9,	21,	−0.0005,	0.0005
10,	2,	0.0149,	−0.0149
10,	3,	0.0017,	−0.0017
10,	9,	−0.0006,	0.0006
10,	10,	0.0022,	−0.0022
10,	20,	0.0005,	−0.0005
10,	21,	−0.0003,	0.0003
12,	4,	−0.0010,	0.0010
12,	12,	0.0002,	−0.0002
12,	13,	−0.0003,	0.0003
13,	4,	0.0011,	−0.0011
13,	5,	−0.0007,	0.0007
13,	12,	−0.0005,	0.0005
13,	13,	−0.0007,	0.0007
13,	14,	0.0004,	−0.0004
14,	1,	0.0089,	−0.0089
14,	4,	−0.0002,	0.0002
14,	5,	−0.0012,	0.0012
14,	6,	0.0004,	−0.0004
14,	13,	−0.0003,	0.0003
14,	14,	−0.0002,	0.0002
14,	15,	0.0005,	−0.0005
15,	1,	−0.0145,	0.0145
15,	5,	0.0016,	−0.0016
15,	6,	0.0036,	−0.0036
15,	14,	−0.0006,	0.0006
15,	15,	−0.0020,	0.0020
20,	2,	−0.0323,	0.0323
20,	3,	0.0239,	−0.0239
20,	8,	0.0028,	−0.0028
20,	9,	0.0007,	−0.0007
20,	10,	−0.0012,	0.0012
20,	20,	−0.0022,	0.0022
20,	21,	0.0008,	−0.0008
21,	2,	−0.0074,	0.0074
21,	3,	0.0009,	−0.0009
21,	10,	−0.0001,	0.0001
21,	20,	−0.0003,	0.0003
21,	21,	0.0002,	−0.0002

TABLE XV. OBDME for the ground state transition in ^{7}Li, as calculated using the CK interaction.

$J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.8284,	2.8284
3,	3,	0.2614,	0.7689
2,	2,	0.8152,	1.4563

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
3,	3,	-0.1957,	0.2599
3,	2,	0.3115,	-0.2833
2,	3,	-0.3115,	0.2833
2,	2,	1.1063,	0.6054

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
3,	2,	-0.1765,	-0.8032
2,	3,	0.1765,	0.8032
2,	2,	1.0333,	0.9839

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	1.6876,	0.0183

TABLE XVI. As for Table XV, but using the Zheng interaction defined in the $0\hbar\omega$ space.

$J = 0$

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.8284,	2.8284
2,	2,	0.7998,	1.5173
3,	3,	0.2831,	0.6826

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	1.0374,	0.6871
2,	3,	-0.3351,	0.3054
3,	2,	0.3351,	-0.3054
3,	3,	-0.2152,	0.2391

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	0.8887,	0.9373
2,	3,	0.1884,	0.8371
3,	2,	-0.1884,	-0.8371

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	1.5758,	-0.1613

TABLE XVII. As for Table XV, but using the MK3W interaction.

$J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.7263,	2.7366
1,	6,	−0.0905,	−0.1470
2,	2,	0.7954,	1.3621
2,	9,	−0.0738,	−0.1375
3,	3,	0.2799,	0.8462
3,	10,	−0.0253,	−0.1058
4,	4,	0.0268,	0.0246
5,	5,	0.0233,	0.0232
6,	1,	−0.0905,	−0.1470
6,	6,	0.0083,	0.0183
7,	7,	0.0038,	0.0042
8,	8,	0.0009,	0.0031
9,	2,	−0.0738,	−0.1375
9,	9,	0.0083,	0.0168
10,	3,	−0.0253,	−0.1058
10,	10,	0.0030,	0.0164

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	−0.0026,	0.0015
1,	5,	−0.0013,	0.0114
1,	6,	−0.0592,	0.0141
2,	2,	1.0715,	0.5141
2,	3,	−0.3006,	0.2343
2,	8,	−0.0129,	0.0147
2,	9,	−0.1075,	−0.0549
2,	10,	0.0286,	−0.0416
3,	2,	0.3006,	−0.2343
3,	3,	−0.1982,	0.2633
3,	9,	−0.0215,	0.0304
3,	10,	0.0188,	−0.0485
4,	4,	0.0133,	0.0125
4,	5,	0.0001,	0.0030
5,	1,	0.0013,	−0.0114
5,	4,	−0.0001,	−0.0030
5,	5,	0.0063,	0.0071
5,	6,	−0.0014,	0.0016
6,	1,	−0.0592,	0.0141
6,	5,	0.0014,	−0.0016
6,	6,	0.0088,	−0.0016

```
 7,  7,        0.0057,        0.0055
 7,  8,       -0.0014,        0.0010
 8,  2,        0.0129,       -0.0147
 8,  7,        0.0014,       -0.0010
 8,  8,        0.0009,        0.0036
 8,  9,       -0.0012,        0.0020
 9,  2,       -0.1075,       -0.0549
 9,  3,        0.0215,       -0.0304
 9,  8,        0.0012,       -0.0020
 9,  9,        0.0126,        0.0066
 9, 10,       -0.0026,        0.0057
10,  2,       -0.0286,        0.0416
10,  3,        0.0188,       -0.0485
10,  9,        0.0026,       -0.0057
10, 10,       -0.0022,        0.0092
```

$J = 2$:

```
j2   j1        Sjj(p)         Sjj(n)
=====================================
 1,  4,       -0.1655,       -0.1584
 1,  5,       -0.1467,       -0.1493
 2,  2,        1.0131,        0.9352
 2,  3,        0.1779,        0.7408
 2,  7,       -0.0261,       -0.0514
 2,  8,       -0.0109,       -0.0131
 2,  9,       -0.1126,       -0.1013
 2, 10,       -0.0164,       -0.1038
 3,  2,       -0.1779,       -0.7408
 3,  8,       -0.0194,       -0.0400
 3,  9,        0.0121,        0.0777
 4,  1,       -0.1655,       -0.1584
 4,  4,        0.0178,        0.0155
 4,  5,        0.0061,        0.0077
 4,  6,        0.0077,        0.0113
 5,  1,        0.1467,        0.1493
 5,  4,       -0.0061,       -0.0077
 5,  5,        0.0112,        0.0103
 5,  6,       -0.0060,       -0.0101
 6,  4,        0.0077,        0.0113
 6,  5,        0.0060,        0.0101
 7,  2,       -0.0261,       -0.0514
 7,  7,        0.0055,        0.0036
 7,  8,       -0.0025,        0.0007
 7,  9,        0.0023,        0.0059
 8,  2,        0.0109,        0.0131
```

j2	j1		
8,	3,	−0.0194,	−0.0400
8,	7,	0.0025,	−0.0007
8,	8,	0.0000,	0.0016
8,	9,	−0.0010,	−0.0015
8,	10,	0.0023,	0.0057
9,	2,	−0.1126,	−0.1013
9,	3,	−0.0121,	−0.0777
9,	7,	0.0023,	0.0059
9,	8,	0.0010,	0.0015
9,	9,	0.0139,	0.0126
9,	10,	0.0014,	0.0128
10,	2,	0.0164,	0.1038
10,	8,	0.0023,	0.0057
10,	9,	−0.0014,	−0.0128

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	−0.0346,	−0.0099
2,	2,	1.6288,	0.1084
2,	7,	−0.0452,	−0.0009
2,	8,	0.0136,	0.0199
2,	9,	−0.1642,	−0.0053
3,	7,	−0.0502,	0.0010
3,	8,	0.0061,	−0.0152
4,	1,	−0.0346,	−0.0099
4,	4,	0.0051,	0.0029
4,	5,	−0.0030,	−0.0014
4,	6,	0.0126,	0.0000
5,	4,	0.0030,	0.0014
5,	5,	−0.0019,	−0.0015
6,	4,	0.0126,	0.0000
7,	2,	−0.0452,	−0.0009
7,	3,	0.0502,	−0.0010
7,	7,	0.0037,	0.0006
7,	8,	−0.0025,	−0.0009
7,	9,	0.0040,	−0.0008
7,	10,	−0.0060,	0.0008
8,	2,	−0.0136,	−0.0199
8,	3,	0.0061,	−0.0152
8,	7,	0.0025,	0.0009
8,	8,	−0.0011,	0.0003
8,	9,	0.0012,	0.0023
8,	10,	−0.0007,	0.0028
9,	2,	−0.1642,	−0.0053

```
 9,  7,      0.0040,      -0.0008
 9,  8,     -0.0012,      -0.0023
 9,  9,      0.0192,      -0.0001
10,  7,      0.0060,      -0.0008
10,  8,     -0.0007,       0.0028
```

TABLE XVIII. As for Table XV, but using the Zheng interaction defined in the $(0+2)\hbar\omega$ space. $J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.6781,	2.7103
1,	6,	0.2410,	0.2148
2,	2,	0.8087,	1.5254
2,	9,	0.0383,	0.0561
3,	3,	0.2925,	0.6668
3,	10,	0.0049,	0.0019
4,	4,	0.0237,	0.0196
5,	5,	0.0303,	0.0275
6,	1,	0.2410,	0.2148
6,	6,	0.0303,	0.0288
7,	7,	0.0039,	0.0048
8,	8,	0.0017,	0.0043
9,	2,	0.0383,	0.0561
9,	9,	0.0023,	0.0027
10,	3,	0.0049,	0.0019
10,	10,	0.0001,	0.0001

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	0.0162,	-0.0013
1,	5,	0.0113,	0.0274
1,	6,	-0.0289,	0.0225
2,	2,	1.0309,	0.5790
2,	3,	-0.3120,	0.2648
2,	8,	-0.0148,	0.0384
2,	9,	0.0525,	0.0368
2,	10,	-0.0063,	-0.0056
3,	2,	0.3120,	-0.2648
3,	3,	-0.1890,	0.1947
3,	9,	0.0129,	-0.0120
3,	10,	-0.0038,	-0.0057
4,	4,	0.0111,	0.0121
4,	5,	0.0020,	0.0049
5,	1,	-0.0113,	-0.0274
5,	4,	-0.0020,	-0.0049
5,	5,	0.0120,	0.0067
5,	6,	-0.0008,	-0.0019
6,	1,	-0.0289,	0.0225
6,	5,	0.0008,	0.0019
6,	6,	-0.0043,	0.0056

7,	7,	0.0059,	0.0063
7,	8,	-0.0014,	0.0017
8,	2,	0.0148,	-0.0384
8,	7,	0.0014,	-0.0017
8,	8,	0.0021,	0.0043
8,	9,	0.0007,	-0.0016
9,	2,	0.0525,	0.0368
9,	3,	-0.0129,	0.0120
9,	8,	-0.0007,	0.0016
9,	9,	0.0032,	0.0024
9,	10,	-0.0003,	-0.0003
10,	2,	0.0063,	0.0056
10,	3,	-0.0038,	-0.0057
10,	9,	0.0003,	0.0003

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.1385,	-0.1122
1,	5,	-0.1365,	-0.1323
2,	2,	0.8996,	0.9388
2,	3,	0.1738,	0.7431
2,	7,	-0.0288,	-0.0557
2,	8,	-0.0134,	-0.0018
2,	9,	0.0499,	0.0411
2,	10,	0.0036,	-0.0030
3,	2,	-0.1738,	-0.7431
3,	8,	-0.0224,	-0.0390
3,	9,	-0.0074,	-0.0307
4,	1,	-0.1385,	-0.1122
4,	4,	0.0151,	0.0120
4,	5,	0.0064,	0.0069
4,	6,	-0.0145,	-0.0113
5,	1,	0.1365,	0.1323
5,	4,	-0.0064,	-0.0069
5,	5,	0.0158,	0.0105
5,	6,	0.0131,	0.0103
6,	4,	-0.0145,	-0.0113
6,	5,	-0.0131,	-0.0103
7,	2,	-0.0288,	-0.0557
7,	7,	0.0057,	0.0043
7,	8,	-0.0024,	0.0012
7,	9,	-0.0015,	-0.0023
8,	2,	0.0134,	0.0018
8,	3,	-0.0224,	-0.0390

```
8,  7,          0.0024,        -0.0012
8,  8,          0.0008,         0.0014
8,  9,          0.0006,        -0.0005
8, 10,         -0.0004,        -0.0003
9,  2,          0.0499,         0.0411
9,  3,          0.0074,         0.0307
9,  7,         -0.0015,        -0.0023
9,  8,         -0.0006,         0.0005
9,  9,          0.0032,         0.0023
9, 10,          0.0002,        -0.0001
10,  2,        -0.0036,         0.0030
10,  8,        -0.0004,        -0.0003
10,  9,        -0.0002,         0.0001
```

$J = 3$:

```
j2   j1        Sjj(p)          Sjj(n)
==========================================
 1,  4,        -0.0024,         0.0002
 2,  2,         1.5637,        -0.0926
 2,  7,        -0.0499,        -0.0058
 2,  8,         0.0130,         0.0493
 2,  9,         0.0802,         0.0056
 3,  7,        -0.0479,         0.0013
 3,  8,         0.0058,        -0.0275
 4,  1,        -0.0024,         0.0002
 4,  4,         0.0035,         0.0046
 4,  5,        -0.0001,         0.0021
 4,  6,         0.0047,        -0.0019
 5,  4,         0.0001,        -0.0021
 5,  5,         0.0032,        -0.0026
 6,  4,         0.0047,        -0.0019
 7,  2,        -0.0499,        -0.0058
 7,  3,         0.0479,        -0.0013
 7,  7,         0.0038,         0.0011
 7,  8,        -0.0024,        -0.0016
 7,  9,        -0.0027,        -0.0009
 7, 10,         0.0012,         0.0003
 8,  2,        -0.0130,        -0.0493
 8,  3,         0.0058,        -0.0275
 8,  7,         0.0024,         0.0016
 8,  8,        -0.0010,         0.0016
 8,  9,        -0.0007,        -0.0024
 8, 10,         0.0002,         0.0003
 9,  2,         0.0802,         0.0056
 9,  7,        -0.0027,        -0.0009
```

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```
 9,  8,       0.0007,       0.0024
 9,  9,       0.0049,       0.0008
10,  7,      -0.0012,      -0.0003
10,  8,       0.0002,       0.0003
```

TABLE XIX. As for Table XV, but using the Zheng interaction defined in the $(0 + 2 + 4)\hbar\omega$ space.

$J = 0$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	2.6054,	2.6475
1,	6,	0.1843,	0.1476
1,	15,	0.0900,	0.1100
2,	2,	0.8006,	1.5048
2,	9,	0.0315,	0.0338
2,	20,	0.0314,	0.0627
3,	3,	0.2877,	0.6486
3,	10,	0.0115,	-0.0023
3,	21,	0.0043,	0.0159
4,	4,	0.0307,	0.0274
4,	13,	0.0064,	0.0049
5,	5,	0.0427,	0.0407
5,	14,	0.0092,	0.0074
6,	1,	0.1843,	0.1476
6,	6,	0.0376,	0.0380
6,	15,	0.0073,	0.0071
7,	7,	0.0064,	0.0084
7,	18,	0.0011,	0.0014
8,	8,	0.0074,	0.0108
8,	19,	0.0004,	0.0006
9,	2,	0.0315,	0.0338
9,	9,	0.0088,	0.0108
9,	20,	0.0009,	0.0009
10,	3,	0.0115,	-0.0023
10,	10,	0.0072,	0.0102
10,	21,	-0.0000,	-0.0006
11,	11,	0.0002,	0.0002
12,	12,	0.0009,	0.0014
13,	4,	0.0064,	0.0049
13,	13,	0.0028,	0.0029
14,	5,	0.0092,	0.0074
14,	14,	0.0037,	0.0036
15,	1,	0.0900,	0.1100
15,	6,	0.0073,	0.0071
15,	15,	0.0047,	0.0073
17,	17,	0.0000,	0.0002
18,	7,	0.0011,	0.0014
18,	18,	0.0004,	0.0005
19,	8,	0.0004,	0.0006
19,	19,	0.0001,	0.0002

j2 j1	Sjj(p)	Sjj(n)
20, 2,	0.0314,	0.0627
20, 9,	0.0009,	0.0009
20, 20,	0.0017,	0.0035
21, 3,	0.0043,	0.0159
21, 10,	−0.0000,	−0.0006
21, 21,	0.0001,	0.0007

$J = 1$:

j2 j1	Sjj(p)	Sjj(n)
1, 1,	0.0202,	−0.0033
1, 5,	0.0100,	0.0271
1, 6,	−0.0337,	0.0228
1, 14,	0.0075,	−0.0048
1, 15,	0.0154,	0.0024
2, 2,	1.0077,	0.5573
2, 3,	−0.3007,	0.2560
2, 8,	−0.0155,	0.0406
2, 9,	0.0294,	0.0151
2, 10,	0.0018,	−0.0175
2, 19,	−0.0033,	0.0002
2, 20,	0.0449,	0.0306
2, 21,	−0.0058,	0.0107
3, 2,	0.3007,	−0.2560
3, 3,	−0.1799,	0.1950
3, 9,	0.0080,	−0.0039
3, 10,	0.0013,	−0.0151
3, 20,	0.0091,	−0.0153
3, 21,	−0.0035,	0.0120
4, 4,	0.0104,	0.0113
4, 5,	0.0011,	0.0052
4, 12,	0.0001,	0.0015
4, 13,	0.0021,	0.0031
4, 14,	0.0012,	0.0013
5, 1,	−0.0100,	−0.0271
5, 4,	−0.0011,	−0.0052
5, 5,	0.0107,	0.0053
5, 6,	0.0000,	−0.0010
5, 13,	−0.0012,	−0.0012
5, 14,	0.0040,	0.0014
5, 15,	0.0001,	−0.0020
6, 1,	−0.0337,	0.0228
6, 5,	−0.0000,	0.0010
6, 6,	−0.0018,	0.0039
6, 14,	0.0003,	−0.0001

6,	15,	-0.0004,	0.0018
7,	7,	0.0078,	0.0075
7,	8,	-0.0022,	0.0024
7,	17,	-0.0000,	0.0005
7,	18,	0.0017,	0.0018
7,	19,	-0.0003,	0.0003
8,	2,	0.0155,	-0.0406
8,	7,	0.0022,	-0.0024
8,	8,	0.0032,	0.0059
8,	9,	0.0006,	-0.0011
8,	18,	0.0004,	-0.0005
8,	19,	0.0005,	0.0006
8,	20,	0.0005,	-0.0021
9,	2,	0.0294,	0.0151
9,	3,	-0.0080,	0.0039
9,	8,	-0.0006,	0.0011
9,	9,	0.0043,	0.0024
9,	10,	-0.0004,	0.0005
9,	20,	0.0013,	0.0009
9,	21,	-0.0002,	0.0001
10,	2,	-0.0018,	0.0175
10,	3,	0.0013,	-0.0151
10,	9,	0.0004,	-0.0005
10,	10,	-0.0001,	0.0038
10,	20,	-0.0000,	0.0009
10,	21,	0.0000,	-0.0007
11,	11,	0.0003,	0.0003
11,	12,	-0.0000,	0.0001
12,	4,	-0.0001,	-0.0015
12,	11,	0.0000,	-0.0001
12,	12,	0.0009,	0.0015
12,	13,	-0.0001,	-0.0002
13,	4,	0.0021,	0.0031
13,	5,	0.0012,	0.0012
13,	12,	0.0001,	0.0002
13,	13,	0.0014,	0.0016
13,	14,	0.0003,	0.0006
14,	1,	-0.0075,	0.0048
14,	4,	-0.0012,	-0.0013
14,	5,	0.0040,	0.0014
14,	6,	-0.0003,	0.0001
14,	13,	-0.0003,	-0.0006
14,	14,	0.0017,	0.0015
14,	15,	-0.0003,	0.0002
15,	1,	0.0154,	0.0024

15,	5,	-0.0001,	0.0020
15,	6,	-0.0004,	0.0018
15,	14,	0.0003,	-0.0002
15,	15,	0.0018,	0.0002
17,	7,	0.0000,	-0.0005
17,	17,	-0.0000,	0.0004
17,	18,	0.0000,	-0.0002
18,	7,	0.0017,	0.0018
18,	8,	-0.0004,	0.0005
18,	17,	-0.0000,	0.0002
18,	18,	0.0006,	0.0007
18,	19,	-0.0001,	0.0001
19,	2,	0.0033,	-0.0002
19,	7,	0.0003,	-0.0003
19,	8,	0.0005,	0.0006
19,	18,	0.0001,	-0.0001
19,	19,	0.0002,	0.0003
19,	20,	0.0001,	-0.0000
20,	2,	0.0449,	0.0306
20,	3,	-0.0091,	0.0153
20,	8,	-0.0005,	0.0021
20,	9,	0.0013,	0.0009
20,	10,	0.0000,	-0.0009
20,	19,	-0.0001,	0.0000
20,	20,	0.0025,	0.0020
20,	21,	-0.0002,	0.0008
21,	2,	0.0058,	-0.0107
21,	3,	-0.0035,	0.0120
21,	9,	0.0002,	-0.0001
21,	10,	0.0000,	-0.0007
21,	20,	0.0002,	-0.0008
21,	21,	-0.0001,	0.0007

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.1479,	-0.1278
1,	5,	-0.1451,	-0.1445
1,	13,	-0.0337,	-0.0157
1,	14,	-0.0378,	-0.0299
2,	2,	0.8869,	0.9259
2,	3,	0.1722,	0.7282
2,	7,	-0.0329,	-0.0635
2,	8,	-0.0144,	-0.0050
2,	9,	0.0250,	0.0180

2,	10,	-0.0004,	-0.0317
2,	18,	-0.0089,	-0.0157
2,	19,	-0.0031,	-0.0055
2,	20,	0.0457,	0.0438
2,	21,	0.0036,	0.0246
3,	2,	-0.1722,	-0.7282
3,	8,	-0.0274,	-0.0449
3,	9,	-0.0035,	-0.0070
3,	19,	-0.0047,	-0.0078
3,	20,	-0.0054,	-0.0358
4,	1,	-0.1479,	-0.1278
4,	4,	0.0166,	0.0140
4,	5,	0.0076,	0.0079
4,	6,	-0.0103,	-0.0078
4,	11,	-0.0009,	-0.0009
4,	12,	-0.0002,	0.0006
4,	13,	0.0037,	0.0029
4,	14,	0.0023,	0.0019
4,	15,	-0.0050,	-0.0051
5,	1,	0.1451,	0.1445
5,	4,	-0.0076,	-0.0079
5,	5,	0.0180,	0.0134
5,	6,	0.0082,	0.0050
5,	12,	-0.0020,	-0.0025
5,	13,	-0.0018,	-0.0013
5,	14,	0.0049,	0.0031
5,	15,	0.0041,	0.0046
6,	4,	-0.0103,	-0.0078
6,	5,	-0.0082,	-0.0050
6,	13,	-0.0031,	-0.0025
6,	14,	-0.0030,	-0.0017
7,	2,	-0.0329,	-0.0635
7,	7,	0.0066,	0.0058
7,	8,	-0.0019,	0.0017
7,	9,	-0.0018,	-0.0020
7,	17,	-0.0000,	0.0008
7,	18,	0.0016,	0.0013
7,	19,	-0.0005,	0.0004
7,	20,	-0.0009,	-0.0022
8,	2,	0.0144,	0.0050
8,	3,	-0.0274,	-0.0449
8,	7,	0.0019,	-0.0017
8,	8,	0.0031,	0.0040
8,	9,	0.0004,	-0.0008
8,	10,	-0.0015,	-0.0004

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8,	17,	0.0000,	−0.0006
8,	18,	0.0006,	−0.0004
8,	19,	0.0003,	0.0001
8,	20,	0.0004,	−0.0005
8,	21,	−0.0003,	−0.0010
9,	2,	0.0250,	0.0180
9,	3,	0.0035,	0.0070
9,	7,	−0.0018,	−0.0020
9,	8,	−0.0004,	0.0008
9,	9,	0.0036,	0.0034
9,	10,	0.0005,	0.0012
9,	18,	−0.0002,	−0.0003
9,	20,	0.0013,	0.0008
9,	21,	0.0001,	0.0003
10,	2,	0.0004,	0.0317
10,	8,	−0.0015,	−0.0004
10,	9,	−0.0005,	−0.0012
10,	20,	−0.0000,	0.0015
11,	4,	−0.0009,	−0.0009
11,	11,	0.0003,	0.0003
11,	13,	−0.0003,	−0.0003
12,	4,	0.0002,	−0.0006
12,	5,	−0.0020,	−0.0025
12,	12,	0.0004,	0.0008
12,	13,	0.0000,	−0.0002
12,	14,	−0.0007,	−0.0006
13,	1,	−0.0337,	−0.0157
13,	4,	0.0037,	0.0029
13,	5,	0.0018,	0.0013
13,	6,	−0.0031,	−0.0025
13,	11,	−0.0003,	−0.0003
13,	12,	−0.0000,	0.0002
13,	13,	0.0020,	0.0015
13,	14,	0.0005,	0.0007
13,	15,	−0.0012,	−0.0005
14,	1,	0.0378,	0.0299
14,	4,	−0.0023,	−0.0019
14,	5,	0.0049,	0.0031
14,	6,	0.0030,	0.0017
14,	12,	−0.0007,	−0.0006
14,	13,	−0.0005,	−0.0007
14,	14,	0.0020,	0.0021
14,	15,	0.0010,	0.0005
15,	4,	−0.0050,	−0.0051
15,	5,	−0.0041,	−0.0046

j2	j1		
15,	13,	−0.0012,	−0.0005
15,	14,	−0.0010,	−0.0005
17,	7,	0.0000,	−0.0008
17,	8,	0.0000,	−0.0006
17,	17,	−0.0000,	0.0003
17,	18,	0.0000,	−0.0002
18,	2,	−0.0089,	−0.0157
18,	7,	0.0016,	0.0013
18,	8,	−0.0006,	0.0004
18,	9,	−0.0002,	−0.0003
18,	17,	−0.0000,	0.0002
18,	18,	0.0006,	0.0005
18,	19,	−0.0002,	0.0002
18,	20,	−0.0003,	−0.0007
19,	2,	0.0031,	0.0055
19,	3,	−0.0047,	−0.0078
19,	7,	0.0005,	−0.0004
19,	8,	0.0003,	0.0001
19,	18,	0.0002,	−0.0002
19,	19,	0.0001,	0.0001
19,	20,	0.0001,	0.0002
19,	21,	−0.0001,	−0.0001
20,	2,	0.0457,	0.0438
20,	3,	0.0054,	0.0358
20,	7,	−0.0009,	−0.0022
20,	8,	−0.0004,	0.0005
20,	9,	0.0013,	0.0008
20,	10,	0.0000,	−0.0015
20,	18,	−0.0003,	−0.0007
20,	19,	−0.0001,	−0.0002
20,	20,	0.0028,	0.0026
20,	21,	0.0001,	0.0016
21,	2,	−0.0036,	−0.0246
21,	8,	−0.0003,	−0.0010
21,	9,	−0.0001,	−0.0003
21,	19,	−0.0001,	−0.0001
21,	20,	−0.0001,	−0.0016

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
==			
1,	4,	−0.0034,	0.0018
1,	12,	−0.0033,	−0.0333
1,	13,	0.0247,	0.0018
2,	2,	1.5302,	−0.0874

2,	7,	−0.0545,	−0.0053
2,	8,	0.0136,	0.0501
2,	9,	0.0429,	0.0118
2,	17,	0.0000,	−0.0194
2,	18,	−0.0154,	−0.0027
2,	19,	0.0026,	−0.0017
2,	20,	0.0687,	−0.0064
3,	7,	−0.0516,	0.0026
3,	8,	0.0054,	−0.0285
3,	18,	−0.0146,	0.0016
3,	19,	0.0010,	0.0044
4,	1,	−0.0034,	0.0018
4,	4,	0.0038,	0.0044
4,	5,	−0.0002,	0.0020
4,	6,	0.0053,	−0.0019
4,	11,	−0.0006,	−0.0006
4,	12,	0.0003,	0.0014
4,	13,	−0.0002,	0.0011
4,	14,	0.0007,	0.0014
4,	15,	−0.0008,	−0.0008
5,	4,	0.0002,	−0.0020
5,	5,	0.0035,	−0.0020
5,	11,	−0.0002,	0.0004
5,	12,	−0.0006,	−0.0019
5,	13,	−0.0004,	−0.0012
5,	14,	0.0008,	−0.0024
6,	4,	0.0053,	−0.0019
6,	12,	−0.0001,	−0.0010
6,	13,	0.0024,	−0.0002
7,	2,	−0.0545,	−0.0053
7,	3,	0.0516,	−0.0026
7,	7,	0.0053,	0.0017
7,	8,	−0.0027,	−0.0012
7,	9,	−0.0016,	−0.0012
7,	10,	−0.0004,	−0.0001
7,	17,	−0.0000,	0.0007
7,	18,	0.0011,	0.0004
7,	19,	−0.0005,	0.0002
7,	20,	−0.0016,	0.0001
7,	21,	0.0011,	0.0002
8,	2,	−0.0136,	−0.0501
8,	3,	0.0054,	−0.0285
8,	7,	0.0027,	0.0012
8,	8,	−0.0001,	0.0028
8,	9,	−0.0003,	−0.0015

8,	10,	-0.0001,	0.0018
8,	17,	0.0000,	-0.0009
8,	18,	0.0006,	0.0003
8,	19,	-0.0001,	-0.0003
8,	20,	-0.0006,	-0.0029
8,	21,	0.0003,	-0.0015
9,	2,	0.0429,	0.0118
9,	7,	-0.0016,	-0.0012
9,	8,	0.0003,	0.0015
9,	9,	0.0048,	-0.0000
9,	17,	0.0000,	-0.0001
9,	18,	-0.0004,	-0.0003
9,	20,	0.0019,	0.0005
10,	7,	0.0004,	0.0001
10,	8,	-0.0001,	0.0018
11,	4,	-0.0006,	-0.0006
11,	5,	0.0002,	-0.0004
11,	11,	0.0002,	0.0001
11,	13,	-0.0002,	-0.0002
11,	14,	0.0001,	-0.0002
12,	1,	0.0033,	0.0333
12,	4,	-0.0003,	-0.0014
12,	5,	-0.0006,	-0.0019
12,	6,	0.0001,	0.0010
12,	12,	0.0004,	0.0009
12,	13,	-0.0001,	-0.0001
12,	14,	-0.0001,	0.0000
12,	15,	0.0001,	0.0021
13,	1,	0.0247,	0.0018
13,	4,	-0.0002,	0.0011
13,	5,	0.0004,	0.0012
13,	6,	0.0024,	-0.0002
13,	11,	-0.0002,	-0.0002
13,	12,	0.0001,	0.0001
13,	13,	0.0002,	0.0001
13,	14,	0.0000,	0.0004
13,	15,	0.0014,	-0.0003
14,	4,	-0.0007,	-0.0014
14,	5,	0.0008,	-0.0024
14,	11,	-0.0001,	0.0002
14,	12,	-0.0001,	0.0000
14,	13,	-0.0000,	-0.0004
14,	14,	0.0001,	0.0000
15,	4,	-0.0008,	-0.0008
15,	12,	-0.0001,	-0.0021

```
15, 13,        0.0014,      -0.0003
17,  2,       -0.0000,       0.0194
17,  7,        0.0000,      -0.0007
17,  8,        0.0000,      -0.0009
17,  9,        0.0000,       0.0001
17, 17,        0.0000,       0.0002
17, 18,        0.0000,      -0.0002
17, 20,        0.0000,       0.0010
18,  2,       -0.0154,      -0.0027
18,  3,        0.0146,      -0.0016
18,  7,        0.0011,       0.0004
18,  8,       -0.0006,      -0.0003
18,  9,       -0.0004,      -0.0003
18, 17,        0.0000,       0.0002
18, 18,        0.0004,       0.0002
18, 19,       -0.0002,       0.0001
18, 20,       -0.0006,      -0.0000
18, 21,        0.0004,       0.0001
19,  2,       -0.0026,       0.0017
19,  3,        0.0010,       0.0044
19,  7,        0.0005,      -0.0002
19,  8,       -0.0001,      -0.0003
19, 18,        0.0002,      -0.0001
19, 19,        0.0000,      -0.0002
19, 20,       -0.0001,       0.0000
20,  2,        0.0687,      -0.0064
20,  7,       -0.0016,       0.0001
20,  8,        0.0006,       0.0029
20,  9,        0.0019,       0.0005
20, 17,        0.0000,      -0.0010
20, 18,       -0.0006,      -0.0000
20, 19,        0.0001,      -0.0000
20, 20,        0.0038,      -0.0006
21,  7,       -0.0011,      -0.0002
21,  8,        0.0003,      -0.0015
21, 18,       -0.0004,      -0.0001
```

TABLE XX. OBDME for the ground to $\frac{1}{2}^-$ (0.478 MeV) transition in ^{7}Li, as obtained using the CK interaction.

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
3,	3,	0.0060,	-0.2063
3,	2,	0.9369,	0.1261
2,	3,	-0.3692,	-0.1160
2,	2,	0.3633,	-0.3000

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
3,	2,	1.2148,	0.8726
2,	3,	0.0941,	-0.8096
2,	2,	-0.2090,	-0.9835

TABLE XXI. As for Table XX, but using the Zheng interaction defined in the $0\hbar\omega$ space.

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	0.4051,	-0.3495
2,	3,	-0.4040,	-0.1477
3,	2,	0.8371,	0.1643
3,	3,	0.0015,	-0.1772

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	-0.2362,	-1.1691
2,	3,	0.1059,	-0.8081
3,	2,	1.0840,	0.7389

TABLE XXII. As for Table XX, but using the MK3W interaction.

$J = 1$

j2	j1	Sjj(p)	Sjj(n)
1,	1,	0.0105,	0.0061
1,	5,	-0.0015,	0.0073
1,	6,	0.0684,	-0.0026
2,	2,	-0.3126,	0.2171
2,	3,	0.3388,	0.0612
2,	8,	-0.0139,	-0.0173
2,	9,	0.0219,	-0.0304
2,	10,	-0.0315,	-0.0089
3,	2,	-0.9662,	-0.1254
3,	3,	-0.0025,	0.1700
3,	9,	0.0987,	0.0112
3,	10,	0.0006,	-0.0273
4,	4,	0.0029,	0.0037
4,	5,	0.0037,	0.0025
5,	1,	0.0118,	0.0124
5,	4,	-0.0079,	-0.0035
5,	5,	0.0053,	0.0059
5,	6,	-0.0031,	-0.0001
6,	1,	0.0717,	-0.0030
6,	5,	0.0033,	-0.0014
6,	6,	-0.0094,	0.0005
7,	7,	-0.0000,	0.0020
7,	8,	-0.0000,	0.0007
8,	2,	0.0142,	0.0095
8,	7,	-0.0058,	-0.0011
8,	8,	0.0017,	0.0019
8,	9,	-0.0013,	-0.0010
9,	2,	0.0227,	-0.0338
9,	3,	-0.0246,	-0.0072
9,	8,	0.0013,	0.0020
9,	9,	-0.0020,	0.0048
9,	10,	0.0029,	0.0012
10,	2,	0.1338,	0.0184
10,	3,	0.0010,	-0.0244
10,	9,	-0.0158,	-0.0018
10,	10,	-0.0002,	0.0044

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.1728,	-0.1671

1,	5,	-0.1230,	-0.1255
2,	2,	0.1861,	0.7519
2,	3,	-0.0814,	0.7426
2,	7,	-0.0518,	-0.0492
2,	8,	0.0155,	-0.0275
2,	9,	-0.0126,	-0.0777
2,	10,	0.0080,	-0.1059
3,	2,	-1.2498,	-0.9041
3,	8,	-0.0011,	-0.0276
3,	9,	0.1278,	0.0935
4,	1,	-0.1672,	-0.1638
4,	4,	0.0138,	0.0137
4,	5,	0.0067,	0.0083
4,	6,	0.0034,	0.0113
5,	1,	0.1665,	0.1579
5,	4,	-0.0118,	-0.0078
5,	5,	0.0139,	0.0137
5,	6,	-0.0129,	-0.0109
6,	4,	0.0142,	0.0139
6,	5,	0.0017,	0.0094
7,	2,	0.0000,	-0.0504
7,	7,	0.0000,	0.0026
7,	8,	0.0000,	0.0016
7,	9,	0.0000,	0.0062
8,	2,	0.0375,	0.0174
8,	3,	-0.0385,	-0.0439
8,	7,	-0.0045,	-0.0006
8,	8,	0.0024,	0.0029
8,	9,	-0.0033,	-0.0016
8,	10,	0.0046,	0.0058
9,	2,	-0.0131,	-0.0857
9,	3,	0.0061,	-0.0852
9,	7,	0.0048,	0.0051
9,	8,	-0.0014,	0.0034
9,	9,	0.0011,	0.0106
9,	10,	-0.0007,	0.0143
10,	2,	0.1730,	0.1240
10,	8,	0.0003,	0.0046
10,	9,	-0.0205,	-0.0150

TABLE XXIII. As for Table XX, but using the Zheng interaction defined in the $(0 + 2)\hbar\omega$ space. $J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	0.0015,	-0.0163
1,	5,	-0.0029,	-0.0141
1,	6,	-0.0499,	0.0113
2,	2,	0.3893,	-0.3054
2,	3,	-0.3746,	-0.1109
2,	8,	0.0170,	0.0370
2,	9,	0.0165,	-0.0115
2,	10,	-0.0075,	-0.0004
3,	2,	0.8167,	0.1283
3,	3,	0.0066,	-0.1670
3,	9,	0.0425,	0.0119
3,	10,	-0.0000,	0.0018
4,	4,	-0.0024,	-0.0012
4,	5,	-0.0018,	-0.0002
5,	1,	-0.0099,	-0.0207
5,	4,	0.0050,	0.0005
5,	5,	-0.0039,	-0.0058
5,	6,	0.0016,	-0.0025
6,	1,	-0.0500,	0.0120
6,	5,	-0.0048,	-0.0001
6,	6,	-0.0104,	0.0011
7,	7,	0.0000,	-0.0020
7,	8,	0.0000,	-0.0011
8,	2,	-0.0135,	-0.0333
8,	7,	0.0050,	0.0011
8,	8,	-0.0016,	-0.0006
8,	9,	-0.0007,	-0.0012
9,	2,	0.0176,	-0.0059
9,	3,	-0.0180,	-0.0065
9,	8,	0.0007,	0.0018
9,	9,	0.0009,	-0.0003
9,	10,	-0.0004,	-0.0001
10,	2,	0.0135,	0.0024
10,	3,	-0.0007,	-0.0031
10,	9,	0.0007,	0.0002

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.1383,	0.1347
1,	5,	0.1390,	0.1004

2,	2,	-0.2277,	-1.0655
2,	3,	0.0989,	-0.7302
2,	7,	0.0611,	0.0616
2,	8,	-0.0201,	0.0401
2,	9,	-0.0095,	-0.0449
2,	10,	0.0019,	0.0046
3,	2,	1.0605,	0.7458
3,	8,	0.0022,	0.0014
3,	9,	0.0549,	0.0347
4,	1,	0.1558,	0.1166
4,	4,	-0.0119,	-0.0097
4,	5,	-0.0082,	-0.0073
4,	6,	0.0178,	0.0122
5,	1,	-0.1421,	-0.1387
5,	4,	0.0086,	0.0032
5,	5,	-0.0157,	-0.0154
5,	6,	-0.0109,	-0.0112
6,	4,	0.0109,	0.0097
6,	5,	0.0102,	0.0054
7,	2,	0.0000,	0.0503
7,	7,	0.0000,	-0.0026
7,	8,	0.0000,	-0.0026
7,	9,	-0.0000,	0.0017
8,	2,	-0.0357,	-0.0040
8,	3,	0.0334,	0.0390
8,	7,	0.0039,	-0.0016
8,	8,	-0.0023,	-0.0037
8,	9,	-0.0018,	-0.0003
8,	10,	0.0008,	0.0006
9,	2,	-0.0112,	-0.0340
9,	3,	0.0055,	-0.0226
9,	7,	0.0034,	0.0030
9,	8,	-0.0017,	0.0014
9,	9,	-0.0005,	-0.0018
9,	10,	0.0001,	0.0002
10,	2,	0.0162,	0.0115
10,	8,	-0.0005,	-0.0002
10,	9,	0.0009,	0.0006

TABLE XXIV. As for Table XX, but using the Zheng interaction defined in the $(0 + 2 + 4)\hbar\omega$ space.

$J = 1$:

j2	j1	Sjj(p)	Sjj(n)
1,	1,	-0.0055,	0.0173
1,	5,	0.0020,	0.0111
1,	6,	0.0524,	-0.0107
1,	14,	0.0098,	0.0229
1,	15,	-0.0065,	-0.0025
2,	2,	-0.3802,	0.3067
2,	3,	0.3644,	0.1153
2,	8,	-0.0174,	-0.0384
2,	9,	-0.0088,	-0.0011
2,	10,	-0.0012,	-0.0077
2,	19,	-0.0036,	0.0052
2,	20,	-0.0115,	0.0205
2,	21,	0.0070,	0.0073
3,	2,	-0.7903,	-0.1301
3,	3,	-0.0049,	0.1569
3,	9,	-0.0214,	-0.0106
3,	10,	-0.0003,	-0.0107
3,	20,	-0.0370,	-0.0082
3,	21,	0.0001,	0.0034
4,	4,	0.0014,	0.0005
4,	5,	0.0022,	-0.0006
4,	12,	-0.0005,	-0.0019
4,	13,	0.0012,	0.0003
4,	14,	-0.0001,	-0.0004
5,	1,	0.0111,	0.0202
5,	4,	-0.0047,	-0.0001
5,	5,	0.0022,	0.0050
5,	6,	-0.0024,	0.0026
5,	13,	0.0004,	0.0004
5,	14,	0.0008,	0.0020
5,	15,	0.0001,	0.0017
6,	1,	0.0575,	-0.0108
6,	5,	0.0050,	-0.0013
6,	6,	0.0063,	-0.0003
6,	14,	0.0019,	0.0011
6,	15,	0.0028,	-0.0003
7,	7,	-0.0012,	0.0016
7,	8,	0.0011,	0.0007
7,	17,	0.0000,	-0.0011
7,	18,	-0.0000,	0.0005

8,	2,	0.0137,	0.0371
8,	7,	-0.0056,	-0.0007
8,	8,	0.0015,	0.0001
8,	9,	0.0000,	0.0005
8,	18,	-0.0014,	-0.0002
8,	19,	0.0003,	0.0005
8,	20,	0.0004,	0.0015
9,	2,	-0.0093,	-0.0094
9,	3,	0.0113,	0.0017
9,	8,	0.0002,	-0.0008
9,	9,	-0.0000,	0.0017
9,	10,	0.0010,	0.0008
9,	20,	-0.0003,	-0.0003
9,	21,	0.0002,	0.0000
10,	2,	0.0128,	0.0096
10,	3,	-0.0002,	0.0012
10,	9,	-0.0013,	-0.0004
10,	10,	-0.0001,	-0.0018
10,	20,	0.0005,	0.0004
10,	21,	-0.0000,	0.0001
12,	4,	0.0004,	0.0010
12,	12,	-0.0002,	-0.0004
13,	4,	0.0013,	0.0004
13,	5,	-0.0002,	-0.0004
13,	13,	0.0004,	0.0008
14,	1,	-0.0045,	-0.0120
14,	4,	-0.0002,	0.0005
14,	5,	0.0011,	0.0023
14,	6,	-0.0011,	-0.0001
14,	13,	-0.0001,	0.0001
14,	14,	0.0005,	0.0007
14,	15,	-0.0004,	-0.0008
15,	1,	-0.0067,	-0.0024
15,	5,	0.0009,	-0.0008
15,	6,	0.0022,	-0.0001
15,	14,	0.0008,	0.0018
15,	15,	-0.0006,	0.0000
18,	7,	-0.0000,	0.0004
18,	8,	-0.0000,	0.0002
18,	17,	0.0000,	-0.0003
18,	18,	-0.0000,	0.0001
19,	2,	0.0038,	-0.0001
19,	7,	-0.0012,	0.0002
19,	8,	0.0005,	0.0006
19,	18,	-0.0004,	0.0001

```
19, 19,          0.0001,          0.0002
19, 20,          0.0002,         -0.0000
20,  2,         -0.0128,          0.0203
20,  3,          0.0131,          0.0091
20,  8,         -0.0006,         -0.0025
20,  9,         -0.0003,          0.0001
20, 10,         -0.0001,         -0.0005
20, 19,         -0.0001,          0.0002
20, 20,         -0.0005,          0.0015
20, 21,          0.0003,          0.0005
21,  2,         -0.0232,         -0.0104
21,  3,          0.0006,          0.0002
21,  9,         -0.0006,         -0.0003
21, 20,         -0.0013,         -0.0006
```

$J = 2$:

j2 j1	Sjj(p)	Sjj(n)
1, 4,	-0.1474,	-0.1467
1, 5,	-0.1467,	-0.1174
1, 13,	-0.0241,	-0.0262
1, 14,	-0.0483,	-0.0135
2, 2,	0.2261,	1.0502
2, 3,	-0.0921,	0.7197
2, 7,	-0.0676,	-0.0685
2, 8,	0.0206,	-0.0427
2, 9,	0.0079,	0.0182
2, 10,	0.0013,	-0.0318
2, 18,	-0.0189,	-0.0205
2, 19,	0.0044,	-0.0024
2, 20,	0.0066,	0.0502
2, 21,	-0.0017,	0.0261
3, 2,	-1.0270,	-0.7194
3, 8,	-0.0067,	-0.0085
3, 9,	-0.0270,	-0.0130
3, 19,	-0.0005,	-0.0035
3, 20,	-0.0477,	-0.0318
4, 1,	-0.1651,	-0.1337
4, 4,	0.0146,	0.0129
4, 5,	0.0089,	0.0091
4, 6,	-0.0133,	-0.0091
4, 11,	-0.0013,	-0.0013
4, 12,	-0.0003,	-0.0015
4, 13,	0.0034,	0.0024
4, 14,	0.0028,	0.0015

```
 4, 15,        -0.0050,        -0.0054
 5,  1,         0.1518,         0.1499
 5,  4,        -0.0098,        -0.0042
 5,  5,         0.0183,         0.0179
 5,  6,         0.0055,         0.0055
 5, 12,        -0.0016,        -0.0012
 5, 13,        -0.0010,        -0.0002
 5, 14,         0.0045,         0.0046
 5, 15,         0.0051,         0.0048
 6,  4,        -0.0056,        -0.0044
 6,  5,        -0.0053,        -0.0011
 6, 13,        -0.0021,        -0.0018
 6, 14,        -0.0020,         0.0007
 7,  2,        -0.0016,        -0.0606
 7,  7,         0.0013,         0.0046
 7,  8,        -0.0003,         0.0035
 7,  9,        -0.0009,        -0.0014
 7, 17,         0.0000,        -0.0008
 7, 18,        -0.0000,         0.0007
 7, 19,         0.0000,         0.0002
 7, 20,         0.0000,        -0.0023
 8,  2,         0.0377,         0.0041
 8,  3,        -0.0389,        -0.0455
 8,  7,        -0.0046,         0.0018
 8,  8,         0.0044,         0.0063
 8,  9,         0.0012,        -0.0001
 8, 10,        -0.0015,        -0.0014
 8, 17,         0.0000,        -0.0008
 8, 18,        -0.0011,         0.0005
 8, 19,         0.0004,         0.0009
 8, 20,         0.0011,        -0.0000
 8, 21,        -0.0007,        -0.0006
 9,  2,         0.0082,        -0.0040
 9,  3,        -0.0049,        -0.0049
 9,  7,        -0.0023,        -0.0017
 9,  8,         0.0015,         0.0001
 9,  9,         0.0021,         0.0037
 9, 10,         0.0001,         0.0026
 9, 18,        -0.0005,        -0.0004
 9, 19,         0.0002,        -0.0001
 9, 20,         0.0002,        -0.0002
10,  2,         0.0164,         0.0058
10,  8,        -0.0010,         0.0008
10,  9,        -0.0019,        -0.0010
10, 20,         0.0007,         0.0002
```

```
11,  4,        -0.0006,        -0.0005
11, 12,         0.0000,         0.0001
11, 13,        -0.0002,        -0.0002
12,  4,         0.0002,        -0.0004
12,  5,        -0.0016,        -0.0020
12, 11,        -0.0000,         0.0002
12, 12,         0.0004,         0.0006
12, 13,         0.0001,         0.0000
12, 14,        -0.0007,        -0.0008
13,  1,        -0.0499,        -0.0125
13,  4,         0.0035,         0.0020
13,  5,         0.0025,         0.0009
13,  6,        -0.0046,        -0.0031
13, 11,        -0.0004,        -0.0005
13, 13,         0.0012,         0.0016
13, 14,         0.0010,         0.0006
13, 15,        -0.0019,        -0.0002
14,  1,         0.0313,         0.0375
14,  4,        -0.0018,        -0.0014
14,  5,         0.0046,         0.0038
14,  6,         0.0017,         0.0022
14, 12,        -0.0006,         0.0002
14, 13,        -0.0006,        -0.0000
14, 14,         0.0019,         0.0019
14, 15,         0.0008,         0.0012
15,  4,        -0.0049,        -0.0048
15,  5,        -0.0022,        -0.0035
15, 13,        -0.0009,        -0.0009
15, 14,        -0.0008,         0.0014
18,  2,         0.0000,        -0.0111
18,  7,        -0.0000,         0.0005
18,  8,        -0.0000,         0.0006
18, 17,         0.0000,        -0.0002
18, 18,        -0.0000,         0.0002
18, 20,         0.0000,        -0.0006
19,  2,         0.0100,         0.0046
19,  3,        -0.0097,        -0.0117
19,  7,        -0.0010,         0.0000
19,  8,         0.0007,         0.0007
19,  9,         0.0002,         0.0000
19, 18,        -0.0003,         0.0000
19, 19,         0.0002,         0.0003
19, 20,         0.0004,         0.0002
19, 21,        -0.0002,        -0.0002
20,  2,         0.0079,         0.0524
```

```
20,  3,        -0.0037,         0.0376
20,  7,        -0.0022,        -0.0021
20,  8,         0.0010,        -0.0022
20,  9,         0.0002,         0.0008
20, 10,        -0.0000,        -0.0018
20, 18,        -0.0008,        -0.0008
20, 19,         0.0003,        -0.0000
20, 20,         0.0003,         0.0032
20, 21,        -0.0000,         0.0018
21,  2,        -0.0289,        -0.0154
21,  8,         0.0004,        -0.0001
21,  9,        -0.0008,        -0.0004
21, 19,         0.0002,         0.0000
21, 20,        -0.0017,        -0.0008
```

TABLE XXV. OBDME for the ground to $\frac{7}{2}^-$ (4.630 MeV) transition in ^{7}Li, as obtained using the CK interaction.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
3,	2,	0.0000,	-1.0269
2,	3,	1.0722,	0.9973
2,	2,	0.5835,	1.5624

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	1.0107,	-0.2707

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TABLE XXVI. As for Table XXV, but using the Zheng interaction as defined in the $0\hbar\omega$ space.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	-0.6190,	-1.5074
2,	3,	-1.1258,	-0.9799
3,	2,	0.0000,	1.0554

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
2,	2,	-1.0721,	0.2408

TABLE XXVII. As for Table XXV, but using the MK3W interaction.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.1823,	0.1709
1,	5,	0.1649,	0.1580
2,	2,	-0.5508,	-1.3474
2,	3,	-1.0343,	-1.0603
2,	7,	0.0029,	0.0080
2,	8,	0.0097,	-0.0070
2,	9,	0.0408,	0.1346
2,	10,	0.1024,	0.1153
3,	2,	0.0061,	1.0888
3,	8,	-0.0000,	0.0080
3,	9,	0.0000,	-0.1142
4,	1,	0.3096,	0.2912
4,	4,	-0.0209,	-0.0195
4,	5,	-0.0127,	-0.0090
4,	6,	-0.0198,	-0.0223
5,	1,	-0.2374,	-0.2491
5,	4,	0.0101,	0.0118
5,	5,	-0.0169,	-0.0178
5,	6,	0.0052,	0.0207
6,	4,	-0.0051,	-0.0125
6,	5,	-0.0079,	-0.0080
7,	2,	0.1694,	0.1840
7,	7,	-0.0023,	-0.0034
7,	8,	-0.0026,	0.0010
7,	9,	-0.0189,	-0.0219
8,	2,	0.0160,	-0.0729
8,	3,	0.0143,	0.1103
8,	7,	-0.0003,	0.0010
8,	8,	-0.0006,	-0.0028
8,	9,	-0.0015,	0.0093
8,	10,	-0.0017,	-0.0177
9,	2,	0.0613,	0.1843
9,	3,	0.1155,	0.1263
9,	7,	-0.0004,	-0.0013
9,	8,	-0.0013,	0.0014
9,	9,	-0.0055,	-0.0219
9,	10,	-0.0138,	-0.0167
10,	2,	0.0000,	-0.1908
10,	8,	0.0000,	-0.0017
10,	9,	-0.0000,	0.0237

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.0089,	0.0001
2,	2,	-0.9436,	0.1588
2,	7,	0.0171,	0.0360
2,	8,	0.0314,	0.0050
2,	9,	0.0707,	-0.0302
3,	7,	-0.0000,	-0.0152
3,	8,	0.0000,	0.0310
4,	1,	0.0327,	0.0026
4,	4,	-0.0084,	-0.0070
4,	5,	-0.0045,	-0.0041
4,	6,	-0.0114,	0.0022
5,	4,	0.0022,	0.0039
5,	5,	-0.0027,	-0.0050
6,	4,	-0.0041,	0.0014
7,	2,	0.1378,	0.0551
7,	3,	-0.0536,	0.0357
7,	7,	-0.0051,	-0.0060
7,	8,	-0.0028,	-0.0007
7,	9,	-0.0168,	-0.0068
7,	10,	0.0064,	-0.0072
8,	2,	0.0087,	-0.0235
8,	3,	-0.0175,	0.0331
8,	7,	-0.0010,	0.0024
8,	8,	-0.0012,	-0.0042
8,	9,	-0.0008,	0.0032
8,	10,	0.0021,	-0.0065
9,	2,	0.1062,	-0.0369
9,	7,	-0.0023,	-0.0058
9,	8,	-0.0043,	-0.0001
9,	9,	-0.0096,	0.0062
10,	7,	0.0000,	0.0031
10,	8,	0.0000,	-0.0064

$J = 4$:

j2	j1	Sjj(p)	Sjj(n)
2,	7,	0.0580,	0.0695
2,	8,	0.0593,	0.0792
3,	7,	0.0000,	-0.0588
4,	4,	-0.0177,	-0.0149
4,	5,	-0.0216,	-0.0214
5,	4,	0.0180,	0.0202

7,	2,	0.1278,	0.1006
7,	3,	0.0399,	0.0845
7,	7,	-0.0078,	-0.0056
7,	8,	-0.0006,	-0.0018
7,	9,	-0.0165,	-0.0128
7,	10,	-0.0046,	-0.0134
8,	2,	-0.0162,	-0.1013
8,	7,	-0.0022,	0.0025
8,	8,	-0.0010,	-0.0031
8,	9,	0.0015,	0.0125
9,	7,	-0.0078,	-0.0109
9,	8,	-0.0080,	-0.0118
10,	7,	-0.0000,	0.0122

$J = 5$:

j2	j1	Sjj(p)	Sjj(n)
2,	7,	0.1496,	0.0086
4,	4,	-0.0138,	-0.0035
7,	2,	0.2196,	0.0206
7,	7,	-0.0083,	-0.0013
7,	8,	0.0031,	0.0024
7,	9,	-0.0251,	-0.0013
8,	7,	-0.0034,	-0.0014
8,	8,	0.0008,	-0.0031
9,	7,	-0.0201,	0.0004

TABLE XXVIII. As for Table XXV, but using the Zheng interaction as defined in the $(0+2)\hbar\omega$ space.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.1642,	0.1161
1,	5,	0.1445,	0.1405
2,	2,	-0.5773,	-1.5442
2,	3,	-1.0142,	-0.8912
2,	7,	0.0028,	0.0089
2,	8,	0.0109,	-0.0228
2,	9,	-0.0245,	-0.0458
2,	10,	-0.0203,	-0.0137
3,	2,	-0.0031,	0.9955
3,	8,	0.0000,	0.0117
3,	9,	0.0000,	0.0279
4,	1,	0.2447,	0.2265
4,	4,	-0.0176,	-0.0135
4,	5,	-0.0093,	-0.0039
4,	6,	0.0239,	0.0202
5,	1,	-0.2421,	-0.2097
5,	4,	0.0118,	0.0104
5,	5,	-0.0201,	-0.0210
5,	6,	-0.0231,	-0.0119
6,	4,	0.0199,	0.0133
6,	5,	0.0148,	0.0140
7,	2,	0.1490,	0.1760
7,	7,	-0.0023,	-0.0035
7,	8,	-0.0026,	0.0033
7,	9,	0.0089,	0.0090
8,	2,	0.0151,	-0.0847
8,	3,	0.0141,	0.0791
8,	7,	-0.0002,	0.0012
8,	8,	-0.0008,	-0.0041
8,	9,	0.0007,	-0.0035
8,	10,	0.0003,	-0.0002
9,	2,	-0.0333,	-0.0716
9,	3,	-0.0570,	-0.0434
9,	7,	0.0002,	0.0005
9,	8,	0.0006,	-0.0012
9,	9,	-0.0017,	-0.0027
9,	10,	-0.0014,	-0.0009
10,	2,	0.0000,	-0.0089
10,	8,	0.0000,	-0.0001
10,	9,	0.0000,	-0.0003

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	-0.0091,	-0.0001
2,	2,	-1.0010,	0.2990
2,	7,	0.0167,	0.0398
2,	8,	0.0352,	-0.0217
2,	9,	-0.0424,	0.0033
3,	7,	0.0000,	-0.0133
3,	8,	-0.0000,	0.0454
4,	1,	0.0111,	-0.0013
4,	4,	-0.0047,	-0.0057
4,	5,	-0.0028,	-0.0032
4,	6,	-0.0022,	0.0031
5,	4,	0.0025,	0.0036
5,	5,	-0.0068,	-0.0031
6,	4,	-0.0019,	0.0017
7,	2,	0.1075,	0.0453
7,	3,	-0.0484,	0.0363
7,	7,	-0.0053,	-0.0065
7,	8,	-0.0030,	0.0014
7,	9,	0.0068,	0.0038
7,	10,	-0.0013,	-0.0009
8,	2,	0.0091,	-0.0119
8,	3,	-0.0148,	0.0255
8,	7,	-0.0008,	0.0030
8,	8,	-0.0015,	-0.0052
8,	9,	0.0004,	-0.0015
8,	10,	-0.0004,	-0.0007
9,	2,	-0.0577,	0.0056
9,	7,	0.0012,	0.0023
9,	8,	0.0021,	-0.0011
9,	9,	-0.0030,	-0.0002
10,	7,	0.0000,	0.0001
10,	8,	0.0000,	-0.0005

$J = 4$:

j2	j1	Sjj(p)	Sjj(n)
2,	7,	0.0567,	0.0754
2,	8,	0.0665,	0.0904
3,	7,	0.0000,	-0.0517
4,	4,	-0.0093,	-0.0052
4,	5,	-0.0128,	-0.0114
5,	4,	0.0135,	0.0095

7,	2,	0.0897,	0.0767
7,	3,	0.0339,	0.0646
7,	7,	−0.0081,	−0.0067
7,	8,	−0.0015,	−0.0007
7,	9,	0.0060,	0.0039
7,	10,	0.0010,	−0.0002
8,	2,	−0.0130,	−0.1012
8,	7,	−0.0018,	0.0031
8,	8,	−0.0017,	−0.0023
8,	9,	−0.0007,	−0.0047
9,	7,	0.0040,	0.0046
9,	8,	0.0040,	0.0049
10,	7,	−0.0000,	0.0006

$J = 5$:

j2	j1	Sjj(p)	Sjj(n)
2,	7,	0.1462,	0.0016
4,	4,	0.0013,	−0.0006
7,	2,	0.1821,	0.0006
7,	7,	−0.0085,	−0.0029
7,	8,	0.0015,	0.0039
7,	9,	0.0113,	0.0015
8,	7,	−0.0028,	−0.0019
8,	8,	−0.0002,	−0.0058
9,	7,	0.0104,	0.0017

TABLE XXIX. As for Table XXV, but using the Zheng interaction as defined in the $(0+2+4)\hbar\omega$ space.

$J = 2$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	−0.1804,	−0.1407
1,	5,	−0.1649,	−0.1619
1,	13,	−0.0512,	−0.0134
1,	14,	−0.0386,	−0.0402
2,	2,	0.5676,	1.5312
2,	3,	0.9822,	0.8588
2,	7,	−0.0054,	−0.0190
2,	8,	−0.0161,	0.0208
2,	9,	0.0164,	0.0180
2,	10,	−0.0042,	−0.0041
2,	18,	−0.0009,	−0.0024
2,	19,	−0.0023,	−0.0002
2,	20,	0.0178,	0.0596
2,	21,	0.0184,	0.0137
3,	2,	−0.0035,	−0.9733
3,	8,	−0.0124,	−0.0254
3,	9,	0.0018,	−0.0096
3,	19,	0.0000,	−0.0010
3,	20,	0.0000,	−0.0392
4,	1,	−0.2441,	−0.2312
4,	4,	0.0201,	0.0167
4,	5,	0.0109,	0.0056
4,	6,	−0.0151,	−0.0118
4,	11,	−0.0001,	−0.0001
4,	12,	0.0001,	0.0006
4,	13,	0.0043,	0.0025
4,	14,	0.0018,	0.0014
4,	15,	−0.0101,	−0.0102
5,	1,	0.2385,	0.2192
5,	4,	−0.0123,	−0.0119
5,	5,	0.0225,	0.0236
5,	6,	0.0136,	0.0041
5,	12,	−0.0002,	−0.0008
5,	13,	−0.0035,	−0.0012
5,	14,	0.0059,	0.0052
5,	15,	0.0065,	0.0074
6,	4,	−0.0153,	−0.0104
6,	5,	−0.0103,	−0.0094
6,	13,	−0.0047,	−0.0031
6,	14,	−0.0032,	−0.0033

7,	2,	-0.1448,	-0.1699
7,	7,	0.0039,	0.0060
7,	8,	0.0035,	-0.0027
7,	9,	-0.0052,	-0.0039
7,	17,	0.0000,	0.0002
7,	18,	0.0006,	0.0009
7,	19,	0.0006,	-0.0000
7,	20,	-0.0061,	-0.0076
8,	2,	-0.0137,	0.0801
8,	3,	-0.0203,	-0.0789
8,	7,	0.0004,	-0.0020
8,	8,	0.0040,	0.0076
8,	9,	-0.0009,	0.0006
8,	10,	-0.0022,	0.0024
8,	18,	0.0001,	-0.0003
8,	19,	0.0001,	0.0004
8,	20,	-0.0004,	0.0040
8,	21,	-0.0001,	-0.0026
9,	2,	0.0156,	0.0194
9,	3,	0.0212,	0.0087
9,	7,	-0.0006,	-0.0011
9,	8,	-0.0004,	0.0005
9,	9,	0.0034,	0.0050
9,	10,	0.0023,	0.0016
9,	20,	0.0005,	0.0006
9,	21,	0.0005,	0.0003
10,	2,	-0.0011,	0.0526
10,	8,	-0.0023,	-0.0015
10,	9,	-0.0003,	-0.0024
10,	20,	-0.0000,	0.0022
11,	4,	-0.0033,	-0.0031
11,	11,	0.0001,	0.0001
11,	12,	0.0000,	-0.0002
11,	13,	-0.0012,	-0.0013
12,	4,	0.0002,	0.0015
12,	5,	-0.0053,	-0.0040
12,	12,	0.0004,	0.0009
12,	13,	0.0001,	0.0002
12,	14,	-0.0021,	-0.0008
13,	1,	-0.0444,	-0.0373
13,	4,	0.0048,	0.0037
13,	5,	0.0018,	0.0005
13,	6,	-0.0049,	-0.0040
13,	12,	0.0000,	0.0001
13,	13,	0.0019,	0.0022

13, 14,	0.0007,	-0.0001
13, 15,	-0.0022,	-0.0019
14, 1,	0.0750,	0.0295
14, 4,	-0.0040,	-0.0030
14, 5,	0.0063,	0.0059
14, 6,	0.0049,	0.0004
14, 12,	-0.0001,	-0.0002
14, 13,	-0.0014,	-0.0008
14, 14,	0.0027,	0.0029
14, 15,	0.0021,	-0.0009
15, 4,	-0.0060,	-0.0051
15, 5,	-0.0050,	-0.0048
15, 13,	-0.0020,	0.0001
15, 14,	-0.0009,	-0.0011
16, 7,	-0.0004,	-0.0004
16, 18,	-0.0001,	-0.0002
17, 7,	-0.0003,	0.0004
17, 8,	-0.0014,	-0.0023
17, 17,	-0.0000,	0.0002
17, 18,	-0.0001,	0.0001
17, 19,	-0.0004,	-0.0001
18, 2,	-0.0399,	-0.0495
18, 7,	0.0006,	0.0010
18, 8,	0.0006,	-0.0009
18, 9,	-0.0012,	-0.0010
18, 18,	0.0002,	0.0003
18, 19,	0.0002,	-0.0000
18, 20,	-0.0020,	-0.0026
19, 2,	-0.0030,	0.0156
19, 3,	-0.0035,	-0.0176
19, 7,	0.0000,	-0.0003
19, 8,	0.0002,	0.0008
19, 9,	-0.0001,	0.0002
19, 10,	-0.0000,	0.0005
19, 19,	0.0001,	0.0002
19, 20,	-0.0001,	0.0008
19, 21,	0.0000,	-0.0005
20, 2,	0.0314,	0.0957
20, 3,	0.0547,	0.0460
20, 7,	-0.0002,	-0.0006
20, 8,	-0.0006,	0.0018
20, 9,	0.0008,	0.0008
20, 10,	-0.0001,	-0.0001
20, 18,	-0.0001,	-0.0002
20, 19,	-0.0002,	0.0000

j2	j1	Sjj(p)	Sjj(n)
20,	20,	0.0012,	0.0048
20,	21,	0.0013,	0.0010
21,	2,	0.0000,	-0.0432
21,	8,	0.0000,	-0.0006
21,	9,	0.0000,	-0.0003
21,	20,	0.0000,	-0.0022

$J = 3$:

j2	j1	Sjj(p)	Sjj(n)
1,	4,	0.0060,	0.0005
1,	12,	0.0016,	-0.0179
1,	13,	0.0141,	-0.0019
2,	2,	0.9736,	-0.2973
2,	7,	-0.0213,	-0.0406
2,	8,	-0.0321,	0.0267
2,	9,	0.0264,	0.0001
2,	17,	0.0000,	-0.0028
2,	18,	-0.0051,	-0.0107
2,	19,	-0.0074,	-0.0050
2,	20,	0.0308,	-0.0152
3,	7,	-0.0047,	0.0144
3,	8,	0.0008,	-0.0455
3,	18,	0.0000,	0.0036
3,	19,	-0.0000,	-0.0037
4,	1,	-0.0121,	0.0013
4,	4,	0.0047,	0.0053
4,	5,	0.0023,	0.0032
4,	6,	0.0029,	-0.0026
4,	11,	-0.0004,	-0.0003
4,	12,	-0.0002,	0.0008
4,	13,	-0.0001,	0.0008
4,	14,	0.0006,	0.0009
4,	15,	-0.0019,	-0.0007
5,	4,	-0.0022,	-0.0035
5,	5,	0.0061,	0.0034
5,	11,	0.0002,	0.0002
5,	12,	-0.0008,	-0.0024
5,	13,	-0.0006,	-0.0009
5,	14,	0.0019,	-0.0002
6,	4,	0.0017,	-0.0015
6,	12,	0.0001,	-0.0007
6,	13,	0.0010,	-0.0003
7,	2,	-0.1013,	-0.0384
7,	3,	0.0469,	-0.0308

7,	7,	0.0059,	0.0059
7,	8,	0.0019,	-0.0007
7,	9,	-0.0026,	-0.0012
7,	10,	-0.0003,	0.0023
7,	17,	0.0000,	0.0006
7,	18,	0.0014,	0.0017
7,	19,	0.0007,	0.0003
7,	20,	-0.0052,	-0.0025
7,	21,	0.0010,	-0.0012
8,	2,	-0.0083,	0.0083
8,	3,	0.0134,	-0.0245
8,	7,	0.0013,	-0.0029
8,	8,	0.0015,	0.0048
8,	9,	-0.0004,	-0.0003
8,	10,	-0.0001,	0.0025
8,	17,	0.0000,	-0.0003
8,	18,	0.0002,	-0.0007
8,	19,	0.0003,	0.0006
8,	20,	-0.0002,	0.0013
8,	21,	0.0003,	-0.0015
9,	2,	0.0241,	0.0055
9,	7,	-0.0008,	-0.0005
9,	8,	-0.0007,	0.0010
9,	9,	0.0031,	-0.0003
9,	18,	-0.0001,	-0.0001
9,	19,	-0.0002,	-0.0001
9,	20,	0.0008,	0.0002
10,	7,	-0.0000,	-0.0008
10,	8,	0.0001,	0.0029
10,	18,	0.0000,	-0.0002
10,	19,	0.0000,	0.0002
11,	4,	-0.0014,	-0.0012
11,	5,	0.0003,	-0.0009
11,	11,	0.0003,	0.0003
11,	12,	0.0001,	-0.0001
11,	13,	-0.0005,	-0.0005
11,	14,	0.0001,	-0.0003
12,	1,	-0.0027,	0.0253
12,	4,	0.0000,	-0.0005
12,	5,	-0.0017,	-0.0009
12,	6,	-0.0004,	0.0007
12,	11,	0.0000,	-0.0001
12,	12,	0.0003,	0.0009
12,	13,	-0.0001,	0.0002
12,	14,	-0.0008,	0.0001

12,	15,	−0.0003,	0.0018
13,	1,	0.0179,	−0.0030
13,	4,	0.0005,	0.0013
13,	5,	0.0004,	0.0012
13,	6,	0.0013,	−0.0009
13,	11,	−0.0002,	−0.0003
13,	12,	−0.0000,	0.0002
13,	13,	0.0002,	−0.0000
13,	14,	−0.0000,	0.0003
13,	15,	0.0006,	−0.0009
14,	4,	−0.0009,	−0.0009
14,	5,	0.0021,	−0.0012
14,	12,	−0.0004,	−0.0006
14,	13,	0.0000,	−0.0004
14,	14,	0.0006,	0.0001
15,	4,	0.0000,	−0.0011
15,	12,	0.0000,	−0.0010
15,	13,	0.0008,	−0.0008
16,	7,	−0.0003,	−0.0003
16,	8,	0.0001,	−0.0001
16,	18,	−0.0001,	−0.0001
17,	2,	−0.0068,	0.0246
17,	7,	−0.0005,	0.0001
17,	8,	−0.0008,	−0.0009
17,	9,	−0.0001,	0.0002
17,	17,	0.0000,	0.0003
17,	18,	−0.0002,	0.0000
17,	19,	−0.0003,	−0.0000
17,	20,	−0.0003,	0.0015
18,	2,	−0.0272,	−0.0125
18,	3,	0.0135,	−0.0122
18,	7,	0.0014,	0.0018
18,	8,	0.0008,	−0.0004
18,	9,	−0.0008,	−0.0005
18,	10,	0.0000,	0.0006
18,	17,	0.0000,	0.0002
18,	18,	0.0005,	0.0006
18,	19,	0.0003,	0.0001
18,	20,	−0.0016,	−0.0008
18,	21,	0.0004,	−0.0004
19,	2,	−0.0022,	0.0040
19,	3,	0.0026,	0.0008
19,	7,	0.0001,	−0.0007
19,	8,	0.0005,	0.0011
19,	9,	−0.0000,	0.0001

19,	10,	-0.0001,	0.0003
19,	18,	0.0000,	-0.0003
19,	19,	0.0002,	0.0003
19,	20,	-0.0000,	0.0003
19,	21,	0.0001,	-0.0001
20,	2,	0.0544,	-0.0222
20,	7,	-0.0010,	-0.0028
20,	8,	-0.0020,	0.0022
20,	9,	0.0014,	0.0002
20,	17,	0.0000,	-0.0002
20,	18,	-0.0004,	-0.0009
20,	19,	-0.0005,	-0.0003
20,	20,	0.0021,	-0.0014
21,	7,	0.0000,	0.0006
21,	8,	0.0000,	-0.0022
21,	18,	0.0000,	0.0002
21,	19,	0.0000,	-0.0002

$J = 4$:

j2	j1	Sjj(p)	Sjj(n)
1,	11,	0.0057,	0.0043
1,	12,	0.0070,	0.0069
2,	7,	-0.0558,	-0.0788
2,	8,	-0.0644,	-0.0910
2,	17,	0.0000,	-0.0126
2,	18,	-0.0174,	-0.0201
2,	19,	-0.0140,	-0.0202
3,	7,	0.0007,	0.0537
3,	17,	0.0000,	0.0044
3,	18,	-0.0000,	0.0138
4,	4,	0.0101,	0.0068
4,	5,	0.0147,	0.0140
4,	11,	-0.0008,	-0.0006
4,	12,	-0.0007,	0.0003
4,	13,	0.0014,	0.0001
4,	14,	0.0029,	0.0023
5,	4,	-0.0146,	-0.0122
5,	11,	0.0005,	0.0006
5,	12,	-0.0013,	-0.0015
5,	13,	-0.0035,	-0.0004
6,	11,	0.0006,	0.0005
6,	12,	-0.0001,	-0.0002
7,	2,	-0.0834,	-0.0744
7,	3,	-0.0332,	-0.0607

7,	7,	0.0070,	0.0062
7,	8,	0.0016,	0.0012
7,	9,	-0.0022,	-0.0011
7,	10,	0.0005,	0.0034
7,	17,	-0.0000,	0.0011
7,	18,	0.0022,	0.0018
7,	19,	0.0004,	0.0007
7,	20,	-0.0050,	-0.0039
7,	21,	-0.0009,	-0.0023
8,	2,	0.0117,	0.0937
8,	7,	0.0015,	-0.0029
8,	8,	0.0020,	0.0027
8,	9,	-0.0006,	0.0004
8,	17,	0.0000,	-0.0009
8,	18,	0.0005,	-0.0007
8,	19,	0.0004,	0.0002
8,	20,	0.0005,	0.0051
9,	7,	-0.0016,	-0.0013
9,	8,	-0.0011,	-0.0007
9,	18,	-0.0005,	-0.0004
9,	19,	-0.0003,	-0.0002
10,	7,	0.0002,	-0.0034
10,	17,	0.0000,	-0.0002
10,	18,	0.0000,	-0.0008
11,	1,	0.0083,	0.0072
11,	4,	-0.0010,	-0.0008
11,	5,	-0.0003,	-0.0005
11,	6,	0.0010,	0.0010
11,	11,	0.0003,	0.0003
11,	12,	0.0001,	0.0000
11,	13,	-0.0004,	-0.0004
11,	14,	-0.0001,	-0.0002
11,	15,	0.0003,	0.0003
12,	1,	-0.0125,	-0.0111
12,	4,	0.0002,	0.0001
12,	5,	-0.0021,	-0.0007
12,	6,	0.0004,	-0.0000
12,	11,	0.0000,	-0.0001
12,	12,	-0.0001,	0.0002
12,	14,	-0.0009,	-0.0001
12,	15,	0.0002,	-0.0001
13,	4,	0.0012,	-0.0000
13,	5,	0.0020,	0.0009
13,	11,	-0.0004,	-0.0004
13,	12,	-0.0002,	-0.0001

13,	13,	0.0002,	-0.0003
13,	14,	0.0005,	0.0000
14,	4,	-0.0038,	-0.0012
14,	11,	0.0002,	0.0003
14,	12,	-0.0007,	-0.0004
14,	13,	-0.0010,	0.0002
15,	11,	0.0002,	0.0000
15,	12,	-0.0003,	-0.0005
16,	2,	0.0022,	0.0032
16,	7,	-0.0003,	-0.0001
16,	8,	0.0001,	-0.0000
16,	18,	-0.0001,	-0.0001
16,	20,	0.0001,	0.0002
17,	2,	-0.0034,	0.0017
17,	3,	0.0110,	0.0120
17,	7,	-0.0006,	-0.0008
17,	8,	0.0001,	-0.0004
17,	9,	-0.0000,	0.0001
17,	10,	-0.0000,	-0.0005
17,	17,	0.0000,	0.0004
17,	18,	-0.0002,	-0.0003
17,	20,	-0.0001,	0.0004
17,	21,	0.0000,	0.0004
18,	2,	-0.0213,	-0.0190
18,	3,	-0.0092,	-0.0175
18,	7,	0.0022,	0.0019
18,	8,	0.0005,	0.0002
18,	9,	-0.0007,	-0.0003
18,	10,	0.0000,	0.0008
18,	17,	-0.0000,	0.0004
18,	18,	0.0008,	0.0007
18,	19,	0.0002,	0.0003
18,	20,	-0.0015,	-0.0012
18,	21,	-0.0004,	-0.0008
19,	2,	0.0017,	0.0182
19,	7,	0.0003,	-0.0009
19,	8,	0.0006,	0.0005
19,	9,	0.0000,	0.0001
19,	17,	0.0000,	-0.0002
19,	18,	0.0001,	-0.0004
19,	19,	0.0002,	0.0002
19,	20,	0.0001,	0.0011
20,	7,	-0.0034,	-0.0053
20,	8,	-0.0037,	-0.0055
20,	17,	0.0000,	-0.0010

j2	j1	Sjj(p)	Sjj(n)

20,	18,	−0.0012,	−0.0016
20,	19,	−0.0010,	−0.0014
21,	7,	−0.0000,	0.0025
21,	17,	0.0000,	0.0002
21,	18,	−0.0000,	0.0008

$J = 5$:

j2	j1	Sjj(p)	Sjj(n)
1,	11,	−0.0011,	−0.0001
2,	7,	−0.1493,	0.0001
2,	17,	0.0000,	−0.0315
2,	18,	−0.0450,	0.0006
3,	17,	−0.0000,	0.0221
4,	4,	0.0008,	0.0001
4,	11,	−0.0006,	−0.0006
4,	12,	−0.0001,	0.0015
4,	13,	−0.0041,	−0.0002
5,	11,	0.0004,	0.0006
5,	12,	−0.0009,	−0.0030
6,	11,	0.0001,	0.0001
7,	2,	−0.1735,	−0.0021
7,	7,	0.0087,	0.0024
7,	8,	−0.0017,	−0.0036
7,	9,	−0.0051,	−0.0020
7,	17,	−0.0000,	0.0013
7,	18,	0.0023,	0.0009
7,	19,	−0.0002,	0.0005
7,	20,	−0.0082,	0.0001
8,	7,	0.0028,	0.0018
8,	8,	0.0003,	0.0057
8,	17,	0.0000,	−0.0015
8,	18,	0.0007,	0.0004
8,	19,	0.0002,	−0.0002
9,	7,	−0.0040,	−0.0020
9,	17,	0.0000,	−0.0002
9,	18,	−0.0013,	−0.0005
10,	17,	0.0000,	−0.0013
11,	1,	0.0006,	0.0002
11,	4,	−0.0008,	−0.0007
11,	5,	−0.0003,	−0.0007
11,	6,	−0.0002,	0.0001
11,	11,	0.0003,	0.0002
11,	13,	−0.0003,	−0.0002
11,	14,	−0.0001,	−0.0004

11, 15,	-0.0002,	0.0002
12, 4,	-0.0000,	-0.0014
12, 5,	-0.0010,	-0.0023
12, 12,	0.0000,	0.0008
12, 13,	0.0001,	0.0003
12, 14,	-0.0004,	0.0004
13, 4,	-0.0044,	-0.0001
13, 11,	-0.0004,	-0.0003
13, 12,	0.0000,	-0.0004
13, 13,	-0.0027,	0.0001
14, 11,	0.0001,	0.0004
14, 12,	-0.0004,	0.0006
15, 11,	-0.0004,	0.0002
16, 2,	0.0030,	0.0003
16, 3,	-0.0030,	0.0000
16, 7,	-0.0001,	-0.0000
16, 8,	0.0001,	0.0001
16, 20,	0.0001,	-0.0000
17, 2,	0.0052,	0.0326
17, 3,	-0.0036,	0.0209
17, 7,	-0.0004,	-0.0014
17, 8,	0.0007,	-0.0013
17, 9,	0.0001,	0.0004
17, 10,	0.0001,	-0.0009
17, 17,	0.0000,	0.0004
17, 18,	-0.0001,	-0.0005
17, 19,	0.0001,	-0.0001
17, 20,	0.0003,	0.0020
17, 21,	-0.0001,	0.0009
18, 2,	-0.0475,	0.0028
18, 7,	0.0023,	0.0010
18, 8,	-0.0001,	-0.0008
18, 9,	-0.0015,	-0.0005
18, 17,	0.0000,	0.0004
18, 18,	0.0009,	0.0004
18, 19,	0.0000,	0.0003
18, 20,	-0.0026,	0.0002
19, 7,	0.0004,	-0.0004
19, 8,	0.0004,	0.0004
19, 17,	0.0000,	-0.0003
19, 18,	0.0001,	-0.0002
19, 19,	0.0002,	-0.0002
20, 7,	-0.0087,	-0.0000
20, 17,	0.0000,	-0.0026
20, 18,	-0.0032,	0.0000

21, 17,   −0.0000,   0.0013