No. 22 C_{3h} −6 [hexagonal] (polar)

表1 rank 0

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
1	A'	$\mathtt{A'}$	−	−	$\mathbb{Q}_0^{(h,A')}$	$\mathtt{Qh(0,A',,)}$	C_0

表2 rank 1

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
2	A''	$\mathtt{A''}$	−	−	$\mathbb{Q}_1^{(h,A'')}$	$\mathtt{Qh(1,A'',,)}$	C_0
3	E'	$\mathtt{E'}$	−	0	$\mathbb{Q}_{1,0}^{(h,E')}$	$\mathtt{Qh(1,E',,0)}$	C_1
4	E'	$\mathtt{E'}$	−	1	$\mathbb{Q}_{1,1}^{(h,E')}$	$\mathtt{Qh(1,E',,1)}$	S_1

表3 rank 2

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
5	A'	$\mathtt{A'}$	−	−	$\mathbb{Q}_2^{(h,A')}$	$\mathtt{Qh(2,A',,)}$	C_0
6	E'	$\mathtt{E'}$	−	0	$\mathbb{Q}_{2,0}^{(h,E')}$	$\mathtt{Qh(2,E',,0)}$	C_2
7	E'	$\mathtt{E'}$	−	1	$\mathbb{Q}_{2,1}^{(h,E')}$	$\mathtt{Qh(2,E',,1)}$	$-S_2$
8	E''	$\mathtt{E''}$	−	0	$\mathbb{Q}_{2,0}^{(h,E'')}$	$\mathtt{Qh(2,E'',,0)}$	C_1
9	E''	$\mathtt{E''}$	−	1	$\mathbb{Q}_{2,1}^{(h,E'')}$	$\mathtt{Qh(2,E'',,1)}$	S_1

表4 rank 3

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
10	A'	$\mathtt{A'}$	1	−	$\mathbb{Q}_3^{(h,A',1)}$	$\mathtt{Qh(3,A',1,)}$	S_3
11	A'	$\mathtt{A'}$	2	−	$\mathbb{Q}_3^{(h,A',2)}$	$\mathtt{Qh(3,A',2,)}$	C_3
12	A''	$\mathtt{A''}$	−	−	$\mathbb{Q}_3^{(h,A'')}$	$\mathtt{Qh(3,A'',,)}$	C_0
13	E'	$\mathtt{E'}$	−	0	$\mathbb{Q}_{3,0}^{(h,E')}$	$\mathtt{Qh(3,E',,0)}$	C_1
14	E'	$\mathtt{E'}$	−	1	$\mathbb{Q}_{3,1}^{(h,E')}$	$\mathtt{Qh(3,E',,1)}$	S_1
15	E''	$\mathtt{E''}$	−	0	$\mathbb{Q}_{3,0}^{(h,E'')}$	$\mathtt{Qh(3,E'',,0)}$	C_2
16	E''	$\mathtt{E''}$	−	1	$\mathbb{Q}_{3,1}^{(h,E'')}$	$\mathtt{Qh(3,E'',,1)}$	$-S_2$

表5 rank 4

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
17	A'	$\mathtt{A'}$	−	−	$\mathbb{Q}_4^{(h,A')}$	$\mathtt{Qh(4,A',,)}$	C_0
18	A''	$\mathtt{A''}$	1	−	$\mathbb{Q}_4^{(h,A'',1)}$	$\mathtt{Qh(4,A'',1,)}$	C_3
19	A''	$\mathtt{A''}$	2	−	$\mathbb{Q}_4^{(h,A'',2)}$	$\mathtt{Qh(4,A'',2,)}$	S_3
20	E'	$\mathtt{E'}$	1	0	$\mathbb{Q}_{4,0}^{(h,E',1)}$	$\mathtt{Qh(4,E',1,0)}$	C_4
21	E'	$\mathtt{E'}$	1	1	$\mathbb{Q}_{4,1}^{(h,E',1)}$	$\mathtt{Qh(4,E',1,1)}$	S_4
22	E'	$\mathtt{E'}$	2	0	$\mathbb{Q}_{4,0}^{(h,E',2)}$	$\mathtt{Qh(4,E',2,0)}$	C_2
23	E'	$\mathtt{E'}$	2	1	$\mathbb{Q}_{4,1}^{(h,E',2)}$	$\mathtt{Qh(4,E',2,1)}$	$-S_2$
24	E''	$\mathtt{E''}$	−	0	$\mathbb{Q}_{4,0}^{(h,E'')}$	$\mathtt{Qh(4,E'',,0)}$	C_1
25	E''	$\mathtt{E''}$	−	1	$\mathbb{Q}_{4,1}^{(h,E'')}$	$\mathtt{Qh(4,E'',,1)}$	S_1

表6 rank 5

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
26	A'	$\mathtt{A'}$	1	—	$\mathbb{Q}_5^{(h,A',1)}$	$\mathtt{Qh(5,A',1,)}$	S_3
27	A'	$\mathtt{A'}$	2	—	$\mathbb{Q}_5^{(h,A',2)}$	$\mathtt{Qh(5,A',2,)}$	C_3
28	A''	$\mathtt{A''}$	—	—	$\mathbb{Q}_5^{(h,A'')}$	$\mathtt{Qh(5,A'',,)}$	C_0
29	E'	$\mathtt{E'}$	1	0	$\mathbb{Q}_{5,0}^{(h,E',1)}$	$\mathtt{Qh(5,E',1,0)}$	C_5
30	E'	$\mathtt{E'}$	1	1	$\mathbb{Q}_{5,1}^{(h,E',1)}$	$\mathtt{Qh(5,E',1,1)}$	$-S_5$
31	E'	$\mathtt{E'}$	2	0	$\mathbb{Q}_{5,0}^{(h,E',2)}$	$\mathtt{Qh(5,E',2,0)}$	C_1
32	E'	$\mathtt{E'}$	2	1	$\mathbb{Q}_{5,1}^{(h,E',2)}$	$\mathtt{Qh(5,E',2,1)}$	S_1
33	E''	$\mathtt{E''}$	1	0	$\mathbb{Q}_{5,0}^{(h,E'',1)}$	$\mathtt{Qh(5,E'',1,0)}$	C_4
34	E''	$\mathtt{E''}$	1	1	$\mathbb{Q}_{5,1}^{(h,E'',1)}$	$\mathtt{Qh(5,E'',1,1)}$	S_4
35	E''	$\mathtt{E''}$	2	0	$\mathbb{Q}_{5,0}^{(h,E'',2)}$	$\mathtt{Qh(5,E'',2,0)}$	C_2
36	E''	$\mathtt{E''}$	2	1	$\mathbb{Q}_{5,1}^{(h,E'',2)}$	$\mathtt{Qh(5,E'',2,1)}$	$-S_2$

表7 rank 6

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
37	A'	$\mathtt{A'}$	1	—	$\mathbb{Q}_6^{(h,A',1)}$	$\mathtt{Qh(6,A',1,)}$	C_0
38	A'	$\mathtt{A'}$	2	—	$\mathbb{Q}_6^{(h,A',2)}$	$\mathtt{Qh(6,A',2,)}$	C_6
39	A'	$\mathtt{A'}$	3	—	$\mathbb{Q}_6^{(h,A',3)}$	$\mathtt{Qh(6,A',3,)}$	S_6
40	A''	$\mathtt{A''}$	1	—	$\mathbb{Q}_6^{(h,A'',1)}$	$\mathtt{Qh(6,A'',1,)}$	C_3
41	A''	$\mathtt{A''}$	2	—	$\mathbb{Q}_6^{(h,A'',2)}$	$\mathtt{Qh(6,A'',2,)}$	S_3
42	E'	$\mathtt{E'}$	1	0	$\mathbb{Q}_{6,0}^{(h,E',1)}$	$\mathtt{Qh(6,E',1,0)}$	C_4
43	E'	$\mathtt{E'}$	1	1	$\mathbb{Q}_{6,1}^{(h,E',1)}$	$\mathtt{Qh(6,E',1,1)}$	S_4
44	E'	$\mathtt{E'}$	2	0	$\mathbb{Q}_{6,0}^{(h,E',2)}$	$\mathtt{Qh(6,E',2,0)}$	C_2
45	E'	$\mathtt{E'}$	2	1	$\mathbb{Q}_{6,1}^{(h,E',2)}$	$\mathtt{Qh(6,E',2,1)}$	$-S_2$
46	E''	$\mathtt{E''}$	1	0	$\mathbb{Q}_{6,0}^{(h,E'',1)}$	$\mathtt{Qh(6,E'',1,0)}$	C_5
47	E''	$\mathtt{E''}$	1	1	$\mathbb{Q}_{6,1}^{(h,E'',1)}$	$\mathtt{Qh(6,E'',1,1)}$	$-S_5$
48	E''	$\mathtt{E''}$	2	0	$\mathbb{Q}_{6,0}^{(h,E'',2)}$	$\mathtt{Qh(6,E'',2,0)}$	C_1
49	E''	$\mathtt{E''}$	2	1	$\mathbb{Q}_{6,1}^{(h,E'',2)}$	$\mathtt{Qh(6,E'',2,1)}$	S_1

表8 rank 7

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
50	A'	A$'$	1	–	$\mathbb{Q}_7^{(h,A',1)}$	Qh(7, A$'$, 1,)	S_3
51	A'	A$'$	2	–	$\mathbb{Q}_7^{(h,A',2)}$	Qh(7, A$'$, 2,)	C_3
52	A''	A$''$	1	–	$\mathbb{Q}_7^{(h,A'',1)}$	Qh(7, A$''$, 1,)	S_6
53	A''	A$''$	2	–	$\mathbb{Q}_7^{(h,A'',2)}$	Qh(7, A$''$, 2,)	C_0
54	A''	A$''$	3	–	$\mathbb{Q}_7^{(h,A'',3)}$	Qh(7, A$''$, 3,)	C_6
55	E'	E$'$	1	0	$\mathbb{Q}_{7,0}^{(h,E',1)}$	Qh(7, E$'$, 1, 0)	C_7
56	E'	E$'$	1	1	$\mathbb{Q}_{7,1}^{(h,E',1)}$	Qh(7, E$'$, 1, 1)	S_7
57	E'	E$'$	2	0	$\mathbb{Q}_{7,0}^{(h,E',2)}$	Qh(7, E$'$, 2, 0)	C_5
58	E'	E$'$	2	1	$\mathbb{Q}_{7,1}^{(h,E',2)}$	Qh(7, E$'$, 2, 1)	$-S_5$
59	E'	E$'$	3	0	$\mathbb{Q}_{7,0}^{(h,E',3)}$	Qh(7, E$'$, 3, 0)	C_1
60	E'	E$'$	3	1	$\mathbb{Q}_{7,1}^{(h,E',3)}$	Qh(7, E$'$, 3, 1)	S_1
61	E''	E$''$	1	0	$\mathbb{Q}_{7,0}^{(h,E'',1)}$	Qh(7, E$''$, 1, 0)	C_4
62	E''	E$''$	1	1	$\mathbb{Q}_{7,1}^{(h,E'',1)}$	Qh(7, E$''$, 1, 1)	S_4
63	E''	E$''$	2	0	$\mathbb{Q}_{7,0}^{(h,E'',2)}$	Qh(7, E$''$, 2, 0)	C_2
64	E''	E$''$	2	1	$\mathbb{Q}_{7,1}^{(h,E'',2)}$	Qh(7, E$''$, 2, 1)	$-S_2$

表9 rank 8

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
65	A'	A$'$	1	–	$\mathbb{Q}_8^{(h,A',1)}$	Qh(8, A$'$, 1,)	C_0
66	A'	A$'$	2	–	$\mathbb{Q}_8^{(h,A',2)}$	Qh(8, A$'$, 2,)	C_6
67	A'	A$'$	3	–	$\mathbb{Q}_8^{(h,A',3)}$	Qh(8, A$'$, 3,)	S_6
68	A''	A$''$	1	–	$\mathbb{Q}_8^{(h,A'',1)}$	Qh(8, A$''$, 1,)	C_3
69	A''	A$''$	2	–	$\mathbb{Q}_8^{(h,A'',2)}$	Qh(8, A$''$, 2,)	S_3
70	E'	E$'$	1	0	$\mathbb{Q}_{8,0}^{(h,E',1)}$	Qh(8, E$'$, 1, 0)	C_8
71	E'	E$'$	1	1	$\mathbb{Q}_{8,1}^{(h,E',1)}$	Qh(8, E$'$, 1, 1)	$-S_8$
72	E'	E$'$	2	0	$\mathbb{Q}_{8,0}^{(h,E',2)}$	Qh(8, E$'$, 2, 0)	C_4
73	E'	E$'$	2	1	$\mathbb{Q}_{8,1}^{(h,E',2)}$	Qh(8, E$'$, 2, 1)	S_4
74	E'	E$'$	3	0	$\mathbb{Q}_{8,0}^{(h,E',3)}$	Qh(8, E$'$, 3, 0)	C_2
75	E'	E$'$	3	1	$\mathbb{Q}_{8,1}^{(h,E',3)}$	Qh(8, E$'$, 3, 1)	$-S_2$
76	E''	E$''$	1	0	$\mathbb{Q}_{8,0}^{(h,E'',1)}$	Qh(8, E$''$, 1, 0)	C_7
77	E''	E$''$	1	1	$\mathbb{Q}_{8,1}^{(h,E'',1)}$	Qh(8, E$''$, 1, 1)	S_7
78	E''	E$''$	2	0	$\mathbb{Q}_{8,0}^{(h,E'',2)}$	Qh(8, E$''$, 2, 0)	C_5
79	E''	E$''$	2	1	$\mathbb{Q}_{8,1}^{(h,E'',2)}$	Qh(8, E$''$, 2, 1)	$-S_5$
80	E''	E$''$	3	0	$\mathbb{Q}_{8,0}^{(h,E'',3)}$	Qh(8, E$''$, 3, 0)	C_1
81	E''	E$''$	3	1	$\mathbb{Q}_{8,1}^{(h,E'',3)}$	Qh(8, E$''$, 3, 1)	S_1

表 10 rank 9

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
82	A'	A$'$	1	–	$\mathbb{Q}_9^{(h,A',1)}$	Qh(9, A$'$, 1,)	S_9
83	A'	A$'$	2	–	$\mathbb{Q}_9^{(h,A',2)}$	Qh(9, A$'$, 2,)	S_3
84	A'	A$'$	3	–	$\mathbb{Q}_9^{(h,A',3)}$	Qh(9, A$'$, 3,)	C_9
85	A'	A$'$	4	–	$\mathbb{Q}_9^{(h,A',4)}$	Qh(9, A$'$, 4,)	C_3
86	A''	A$''$	1	–	$\mathbb{Q}_9^{(h,A'',1)}$	Qh(9, A$''$, 1,)	S_6
87	A''	A$''$	2	–	$\mathbb{Q}_9^{(h,A'',2)}$	Qh(9, A$''$, 2,)	C_0
88	A''	A$''$	3	–	$\mathbb{Q}_9^{(h,A'',3)}$	Qh(9, A$''$, 3,)	C_6
89	E'	E$'$	1	0	$\mathbb{Q}_{9,0}^{(h,E',1)}$	Qh(9, E$'$, 1, 0)	C_7
90	E'	E$'$	1	1	$\mathbb{Q}_{9,1}^{(h,E',1)}$	Qh(9, E$'$, 1, 1)	S_7
91	E'	E$'$	2	0	$\mathbb{Q}_{9,0}^{(h,E',2)}$	Qh(9, E$'$, 2, 0)	C_5
92	E'	E$'$	2	1	$\mathbb{Q}_{9,1}^{(h,E',2)}$	Qh(9, E$'$, 2, 1)	$-S_5$
93	E'	E$'$	3	0	$\mathbb{Q}_{9,0}^{(h,E',3)}$	Qh(9, E$'$, 3, 0)	C_1
94	E'	E$'$	3	1	$\mathbb{Q}_{9,1}^{(h,E',3)}$	Qh(9, E$'$, 3, 1)	S_1
95	E''	E$''$	1	0	$\mathbb{Q}_{9,0}^{(h,E'',1)}$	Qh(9, E$''$, 1, 0)	C_8
96	E''	E$''$	1	1	$\mathbb{Q}_{9,1}^{(h,E'',1)}$	Qh(9, E$''$, 1, 1)	$-S_8$
97	E''	E$''$	2	0	$\mathbb{Q}_{9,0}^{(h,E'',2)}$	Qh(9, E$''$, 2, 0)	C_4
98	E''	E$''$	2	1	$\mathbb{Q}_{9,1}^{(h,E'',2)}$	Qh(9, E$''$, 2, 1)	S_4
99	E''	E$''$	3	0	$\mathbb{Q}_{9,0}^{(h,E'',3)}$	Qh(9, E$''$, 3, 0)	C_2
100	E''	E$''$	3	1	$\mathbb{Q}_{9,1}^{(h,E'',3)}$	Qh(9, E$''$, 3, 1)	$-S_2$

表 11 rank 10

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
101	A'	A$'$	1	–	$\mathbb{Q}_{10}^{(h,A',1)}$	Qh(10, A$'$, 1,)	C_0
102	A'	A$'$	2	–	$\mathbb{Q}_{10}^{(h,A',2)}$	Qh(10, A$'$, 2,)	C_6
103	A'	A$'$	3	–	$\mathbb{Q}_{10}^{(h,A',3)}$	Qh(10, A$'$, 3,)	S_6
104	A''	A$''$	1	–	$\mathbb{Q}_{10}^{(h,A'',1)}$	Qh(10, A$''$, 1,)	C_9
105	A''	A$''$	2	–	$\mathbb{Q}_{10}^{(h,A'',2)}$	Qh(10, A$''$, 2,)	C_3
106	A''	A$''$	3	–	$\mathbb{Q}_{10}^{(h,A'',3)}$	Qh(10, A$''$, 3,)	S_9
107	A''	A$''$	4	–	$\mathbb{Q}_{10}^{(h,A'',4)}$	Qh(10, A$''$, 4,)	S_3
108	E'	E$'$	1	0	$\mathbb{Q}_{10,0}^{(h,E',1)}$	Qh(10, E$'$, 1, 0)	C_{10}
109	E'	E$'$	1	1	$\mathbb{Q}_{10,1}^{(h,E',1)}$	Qh(10, E$'$, 1, 1)	S_{10}
110	E'	E$'$	2	0	$\mathbb{Q}_{10,0}^{(h,E',2)}$	Qh(10, E$'$, 2, 0)	C_8
111	E'	E$'$	2	1	$\mathbb{Q}_{10,1}^{(h,E',2)}$	Qh(10, E$'$, 2, 1)	$-S_8$
112	E'	E$'$	3	0	$\mathbb{Q}_{10,0}^{(h,E',3)}$	Qh(10, E$'$, 3, 0)	C_4
113	E'	E$'$	3	1	$\mathbb{Q}_{10,1}^{(h,E',3)}$	Qh(10, E$'$, 3, 1)	S_4
114	E'	E$'$	4	0	$\mathbb{Q}_{10,0}^{(h,E',4)}$	Qh(10, E$'$, 4, 0)	C_2
115	E'	E$'$	4	1	$\mathbb{Q}_{10,1}^{(h,E',4)}$	Qh(10, E$'$, 4, 1)	$-S_2$
116	E''	E$''$	1	0	$\mathbb{Q}_{10,0}^{(h,E'',1)}$	Qh(10, E$''$, 1, 0)	C_7
117	E''	E$''$	1	1	$\mathbb{Q}_{10,1}^{(h,E'',1)}$	Qh(10, E$''$, 1, 1)	S_7
118	E''	E$''$	2	0	$\mathbb{Q}_{10,0}^{(h,E'',2)}$	Qh(10, E$''$, 2, 0)	C_5
119	E''	E$''$	2	1	$\mathbb{Q}_{10,1}^{(h,E'',2)}$	Qh(10, E$''$, 2, 1)	$-S_5$
120	E''	E$''$	3	0	$\mathbb{Q}_{10,0}^{(h,E'',3)}$	Qh(10, E$''$, 3, 0)	C_1
121	E''	E$''$	3	1	$\mathbb{Q}_{10,1}^{(h,E'',3)}$	Qh(10, E$''$, 3, 1)	S_1

表12 rank 11

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
122	A'	A'	1	–	$\mathbb{Q}_{11}^{(h,A',1)}$	Qh(11, A', 1,)	S_9
123	A'	A'	2	–	$\mathbb{Q}_{11}^{(h,A',2)}$	Qh(11, A', 2,)	S_3
124	A'	A'	3	–	$\mathbb{Q}_{11}^{(h,A',3)}$	Qh(11, A', 3,)	C_9
125	A'	A'	4	–	$\mathbb{Q}_{11}^{(h,A',4)}$	Qh(11, A', 4,)	C_3
126	A''	A''	1	–	$\mathbb{Q}_{11}^{(h,A'',1)}$	Qh(11, A'', 1,)	S_6
127	A''	A''	2	–	$\mathbb{Q}_{11}^{(h,A'',2)}$	Qh(11, A'', 2,)	C_0
128	A''	A''	3	–	$\mathbb{Q}_{11}^{(h,A'',3)}$	Qh(11, A'', 3,)	C_6
129	E'	E'	1	0	$\mathbb{Q}_{11,0}^{(h,E',1)}$	Qh(11, E', 1, 0)	C_{11}
130	E'	E'	1	1	$\mathbb{Q}_{11,1}^{(h,E',1)}$	Qh(11, E', 1, 1)	$-S_{11}$
131	E'	E'	2	0	$\mathbb{Q}_{11,0}^{(h,E',2)}$	Qh(11, E', 2, 0)	C_7
132	E'	E'	2	1	$\mathbb{Q}_{11,1}^{(h,E',2)}$	Qh(11, E', 2, 1)	S_7
133	E'	E'	3	0	$\mathbb{Q}_{11,0}^{(h,E',3)}$	Qh(11, E', 3, 0)	C_5
134	E'	E'	3	1	$\mathbb{Q}_{11,1}^{(h,E',3)}$	Qh(11, E', 3, 1)	$-S_5$
135	E'	E'	4	0	$\mathbb{Q}_{11,0}^{(h,E',4)}$	Qh(11, E', 4, 0)	C_1
136	E'	E'	4	1	$\mathbb{Q}_{11,1}^{(h,E',4)}$	Qh(11, E', 4, 1)	S_1
137	E''	E''	1	0	$\mathbb{Q}_{11,0}^{(h,E'',1)}$	Qh(11, E'', 1, 0)	C_{10}
138	E''	E''	1	1	$\mathbb{Q}_{11,1}^{(h,E'',1)}$	Qh(11, E'', 1, 1)	S_{10}
139	E''	E''	2	0	$\mathbb{Q}_{11,0}^{(h,E'',2)}$	Qh(11, E'', 2, 0)	C_8
140	E''	E''	2	1	$\mathbb{Q}_{11,1}^{(h,E'',2)}$	Qh(11, E'', 2, 1)	$-S_8$
141	E''	E''	3	0	$\mathbb{Q}_{11,0}^{(h,E'',3)}$	Qh(11, E'', 3, 0)	C_4
142	E''	E''	3	1	$\mathbb{Q}_{11,1}^{(h,E'',3)}$	Qh(11, E'', 3, 1)	S_4
143	E''	E''	4	0	$\mathbb{Q}_{11,0}^{(h,E'',4)}$	Qh(11, E'', 4, 0)	C_2
144	E''	E''	4	1	$\mathbb{Q}_{11,1}^{(h,E'',4)}$	Qh(11, E'', 4, 1)	$-S_2$