No. 4 C_s m (b-axis setting) [monoclinic] (axial)

表1 rank 0

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

表2 rank 1

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
2	A'	$\mathtt{A}'$	–	–	$\mathbb{G}_1^{(h,A')}$	$\mathtt{Gh(1,A',,)}$	S_1
3	A''	$\mathtt{A}''$	1	–	$\mathbb{G}_1^{(h,A'',1)}$	$\mathtt{Gh(1,A'',1,)}$	C_1
4	A''	$\mathtt{A}''$	2	–	$\mathbb{G}_1^{(h,A'',2)}$	$\mathtt{Gh(1,A'',2,)}$	C_0

表3 rank 2

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
5	A'	$\mathtt{A}'$	1	–	$\mathbb{G}_2^{(h,A',1)}$	$\mathtt{Gh(2,A',1,)}$	S_1
6	A'	$\mathtt{A}'$	2	–	$\mathbb{G}_2^{(h,A',2)}$	$\mathtt{Gh(2,A',2,)}$	S_2
7	A''	$\mathtt{A}''$	1	–	$\mathbb{G}_2^{(h,A'',1)}$	$\mathtt{Gh(2,A'',1,)}$	C_0
8	A''	$\mathtt{A}''$	2	–	$\mathbb{G}_2^{(h,A'',2)}$	$\mathtt{Gh(2,A'',2,)}$	C_2
9	A''	$\mathtt{A}''$	3	–	$\mathbb{G}_2^{(h,A'',3)}$	$\mathtt{Gh(2,A'',3,)}$	C_1

表4 rank 3

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
10	A'	$\mathtt{A}'$	1	–	$\mathbb{G}_3^{(h,A',1)}$	$\mathtt{Gh(3,A',1,)}$	S_2
11	A'	$\mathtt{A}'$	2	–	$\mathbb{G}_3^{(h,A',2)}$	$\mathtt{Gh(3,A',2,)}$	$-\frac{\sqrt{6}S_1}{4}-\frac{\sqrt{10}S_3}{4}$
12	A'	$\mathtt{A}'$	3	–	$\mathbb{G}_3^{(h,A',3)}$	$\mathtt{Gh(3,A',3,)}$	$\frac{\sqrt{10}S_1}{4}-\frac{\sqrt{6}S_3}{4}$
13	A''	$\mathtt{A}''$	1	–	$\mathbb{G}_3^{(h,A'',1)}$	$\mathtt{Gh(3,A'',1,)}$	$-\frac{\sqrt{6}C_1}{4}+\frac{\sqrt{10}C_3}{4}$
14	A''	$\mathtt{A}''$	2	–	$\mathbb{G}_3^{(h,A'',2)}$	$\mathtt{Gh(3,A'',2,)}$	C_0
15	A''	$\mathtt{A}''$	3	–	$\mathbb{G}_3^{(h,A'',3)}$	$\mathtt{Gh(3,A'',3,)}$	$-\frac{\sqrt{10}C_1}{4}-\frac{\sqrt{6}C_3}{4}$
16	A''	$\mathtt{A}''$	4	–	$\mathbb{G}_3^{(h,A'',4)}$	$\mathtt{Gh(3,A'',4,)}$	C_2

表5 rank 4

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
17	A'	$\mathtt{A}'$	1	–	$\mathbb{G}_4^{(h,A',1)}$	$\mathtt{Gh(4,A',1,)}$	$-\frac{\sqrt{14}S_1}{4}-\frac{\sqrt{2}S_3}{4}$
18	A'	$\mathtt{A}'$	2	–	$\mathbb{G}_4^{(h,A',2)}$	$\mathtt{Gh(4,A',2,)}$	S_4
19	A'	$\mathtt{A}'$	3	–	$\mathbb{G}_4^{(h,A',3)}$	$\mathtt{Gh(4,A',3,)}$	$-\frac{\sqrt{2}S_1}{4}+\frac{\sqrt{14}S_3}{4}$
20	A'	$\mathtt{A}'$	4	–	$\mathbb{G}_4^{(h,A',4)}$	$\mathtt{Gh(4,A',4,)}$	S_2
21	A''	$\mathtt{A}''$	1	–	$\mathbb{G}_4^{(h,A'',1)}$	$\mathtt{Gh(4,A'',1,)}$	$\frac{\sqrt{21}C_0}{6}+\frac{\sqrt{15}C_4}{6}$
22	A''	$\mathtt{A}''$	2	–	$\mathbb{G}_4^{(h,A'',2)}$	$\mathtt{Gh(4,A'',2,)}$	$\frac{\sqrt{15}C_0}{6}-\frac{\sqrt{21}C_4}{6}$
23	A''	$\mathtt{A}''$	3	–	$\mathbb{G}_4^{(h,A'',3)}$	$\mathtt{Gh(4,A'',3,)}$	$-C_2$
24	A''	$\mathtt{A}''$	4	–	$\mathbb{G}_4^{(h,A'',4)}$	$\mathtt{Gh(4,A'',4,)}$	$\frac{\sqrt{14}C_1}{4}-\frac{\sqrt{2}C_3}{4}$
25	A''	$\mathtt{A}''$	5	–	$\mathbb{G}_4^{(h,A'',5)}$	$\mathtt{Gh(4,A'',5,)}$	$-\frac{\sqrt{2}C_1}{4}-\frac{\sqrt{14}C_3}{4}$

表6　rank 5

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
26	A'	$\mathtt{A'}$	1	—	$\mathbb{G}_5^{(h,A',1)}$	$\mathtt{Gh(5,A',1,)}$	S_4
27	A'	$\mathtt{A'}$	2	—	$\mathbb{G}_5^{(h,A',2)}$	$\mathtt{Gh(5,A',2,)}$	$-S_2$
28	A'	$\mathtt{A'}$	3	—	$\mathbb{G}_5^{(h,A',3)}$	$\mathtt{Gh(5,A',3,)}$	$\frac{\sqrt{15}S_1}{8} + \frac{\sqrt{70}S_3}{16} + \frac{3\sqrt{14}S_5}{16}$
29	A'	$\mathtt{A'}$	4	—	$\mathbb{G}_5^{(h,A',4)}$	$\mathtt{Gh(5,A',4,)}$	$\frac{\sqrt{21}S_1}{8} - \frac{9\sqrt{2}S_3}{16} + \frac{\sqrt{10}S_5}{16}$
30	A'	$\mathtt{A'}$	5	—	$\mathbb{G}_5^{(h,A',5)}$	$\mathtt{Gh(5,A',5,)}$	$-\frac{\sqrt{7}S_1}{4} - \frac{\sqrt{6}S_3}{8} + \frac{\sqrt{30}S_5}{8}$
31	A''	$\mathtt{A''}$	1	—	$\mathbb{G}_5^{(h,A'',1)}$	$\mathtt{Gh(5,A'',1,)}$	$\frac{\sqrt{15}C_1}{8} - \frac{\sqrt{70}C_3}{16} + \frac{3\sqrt{14}C_5}{16}$
32	A''	$\mathtt{A''}$	2	—	$\mathbb{G}_5^{(h,A'',2)}$	$\mathtt{Gh(5,A'',2,)}$	C_0
33	A''	$\mathtt{A''}$	3	—	$\mathbb{G}_5^{(h,A'',3)}$	$\mathtt{Gh(5,A'',3,)}$	$\frac{\sqrt{21}C_1}{8} + \frac{9\sqrt{2}C_3}{16} + \frac{\sqrt{10}C_5}{16}$
34	A''	$\mathtt{A''}$	4	—	$\mathbb{G}_5^{(h,A'',4)}$	$\mathtt{Gh(5,A'',4,)}$	C_4
35	A''	$\mathtt{A''}$	5	—	$\mathbb{G}_5^{(h,A'',5)}$	$\mathtt{Gh(5,A'',5,)}$	$\frac{\sqrt{7}C_1}{4} - \frac{\sqrt{6}C_3}{8} - \frac{\sqrt{30}C_5}{8}$
36	A''	$\mathtt{A''}$	6	—	$\mathbb{G}_5^{(h,A'',6)}$	$\mathtt{Gh(5,A'',6,)}$	C_2

表7　rank 6

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
37	A'	$\mathtt{A'}$	1	—	$\mathbb{G}_6^{(h,A',1)}$	$\mathtt{Gh(6,A',1,)}$	$\frac{\sqrt{3}S_1}{4} - \frac{\sqrt{30}S_3}{8} - \frac{\sqrt{22}S_5}{8}$
38	A'	$\mathtt{A'}$	2	—	$\mathbb{G}_6^{(h,A',2)}$	$\mathtt{Gh(6,A',2,)}$	S_4
39	A'	$\mathtt{A'}$	3	—	$\mathbb{G}_6^{(h,A',3)}$	$\mathtt{Gh(6,A',3,)}$	$\frac{3\sqrt{22}S_1}{16} + \frac{\sqrt{55}S_3}{16} + \frac{\sqrt{3}S_5}{16}$
40	A'	$\mathtt{A'}$	4	—	$\mathbb{G}_6^{(h,A',4)}$	$\mathtt{Gh(6,A',4,)}$	S_6
41	A'	$\mathtt{A'}$	5	—	$\mathbb{G}_6^{(h,A',5)}$	$\mathtt{Gh(6,A',5,)}$	$\frac{\sqrt{10}S_1}{16} - \frac{9S_3}{16} + \frac{\sqrt{165}S_5}{16}$
42	A'	$\mathtt{A'}$	6	—	$\mathbb{G}_6^{(h,A',6)}$	$\mathtt{Gh(6,A',6,)}$	S_2
43	A''	$\mathtt{A''}$	1	—	$\mathbb{G}_6^{(h,A'',1)}$	$\mathtt{Gh(6,A'',1,)}$	$\frac{\sqrt{2}C_0}{4} - \frac{\sqrt{14}C_4}{4}$
44	A''	$\mathtt{A''}$	2	—	$\mathbb{G}_6^{(h,A'',2)}$	$\mathtt{Gh(6,A'',2,)}$	$\frac{\sqrt{11}C_2}{4} - \frac{\sqrt{5}C_6}{4}$
45	A''	$\mathtt{A''}$	3	—	$\mathbb{G}_6^{(h,A'',3)}$	$\mathtt{Gh(6,A'',3,)}$	$\frac{\sqrt{14}C_0}{4} + \frac{\sqrt{2}C_4}{4}$
46	A''	$\mathtt{A''}$	4	—	$\mathbb{G}_6^{(h,A'',4)}$	$\mathtt{Gh(6,A'',4,)}$	$\frac{\sqrt{5}C_2}{4} + \frac{\sqrt{11}C_6}{4}$
47	A''	$\mathtt{A''}$	5	—	$\mathbb{G}_6^{(h,A'',5)}$	$\mathtt{Gh(6,A'',5,)}$	$-\frac{\sqrt{3}C_1}{4} - \frac{\sqrt{30}C_3}{8} + \frac{\sqrt{22}C_5}{8}$
48	A''	$\mathtt{A''}$	6	—	$\mathbb{G}_6^{(h,A'',6)}$	$\mathtt{Gh(6,A'',6,)}$	$\frac{3\sqrt{22}C_1}{16} - \frac{\sqrt{55}C_3}{16} + \frac{\sqrt{3}C_5}{16}$
49	A''	$\mathtt{A''}$	7	—	$\mathbb{G}_6^{(h,A'',7)}$	$\mathtt{Gh(6,A'',7,)}$	$\frac{\sqrt{10}C_1}{16} + \frac{9C_3}{16} + \frac{\sqrt{165}C_5}{16}$

表8 rank 7

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
50	A'	$\mathtt{A'}$	1	–	$\mathbb{G}_7^{(h,A',1)}$	$\mathtt{Gh(7,A',1,)}$	$\frac{\sqrt{78}S_2}{12} + \frac{\sqrt{66}S_6}{12}$
51	A'	$\mathtt{A'}$	2	–	$\mathbb{G}_7^{(h,A',2)}$	$\mathtt{Gh(7,A',2,)}$	S_4
52	A'	$\mathtt{A'}$	3	–	$\mathbb{G}_7^{(h,A',3)}$	$\mathtt{Gh(7,A',3,)}$	$\frac{\sqrt{66}S_2}{12} - \frac{\sqrt{78}S_6}{12}$
53	A'	$\mathtt{A'}$	4	–	$\mathbb{G}_7^{(h,A',4)}$	$\mathtt{Gh(7,A',4,)}$	$-\frac{5\sqrt{7}S_1}{32} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{231}S_5}{32} - \frac{\sqrt{429}S_7}{32}$
54	A'	$\mathtt{A'}$	5	–	$\mathbb{G}_7^{(h,A',5)}$	$\mathtt{Gh(7,A',5,)}$	$-\frac{3\sqrt{33}S_1}{32} + \frac{\sqrt{11}S_3}{32} + \frac{25S_5}{32} - \frac{\sqrt{91}S_7}{32}$
55	A'	$\mathtt{A'}$	6	–	$\mathbb{G}_7^{(h,A',6)}$	$\mathtt{Gh(7,A',6,)}$	$\frac{\sqrt{858}S_1}{64} - \frac{3\sqrt{286}S_3}{64} + \frac{5\sqrt{26}S_5}{64} - \frac{\sqrt{14}S_7}{64}$
56	A'	$\mathtt{A'}$	7	–	$\mathbb{G}_7^{(h,A',7)}$	$\mathtt{Gh(7,A',7,)}$	$\frac{15\sqrt{6}S_1}{64} + \frac{19\sqrt{2}S_3}{64} + \frac{\sqrt{22}S_5}{64} - \frac{\sqrt{2002}S_7}{64}$
57	A''	$\mathtt{A''}$	1	–	$\mathbb{G}_7^{(h,A'',1)}$	$\mathtt{Gh(7,A'',1,)}$	$-\frac{5\sqrt{7}C_1}{32} + \frac{3\sqrt{21}C_3}{32} - \frac{\sqrt{231}C_5}{32} + \frac{\sqrt{429}C_7}{32}$
58	A''	$\mathtt{A''}$	2	–	$\mathbb{G}_7^{(h,A'',2)}$	$\mathtt{Gh(7,A'',2,)}$	C_0
59	A''	$\mathtt{A''}$	3	–	$\mathbb{G}_7^{(h,A'',3)}$	$\mathtt{Gh(7,A'',3,)}$	$-\frac{3\sqrt{33}C_1}{32} - \frac{\sqrt{11}C_3}{32} + \frac{25C_5}{32} + \frac{\sqrt{91}C_7}{32}$
60	A''	$\mathtt{A''}$	4	–	$\mathbb{G}_7^{(h,A'',4)}$	$\mathtt{Gh(7,A'',4,)}$	C_4
61	A''	$\mathtt{A''}$	5	–	$\mathbb{G}_7^{(h,A'',5)}$	$\mathtt{Gh(7,A'',5,)}$	$-\frac{\sqrt{858}C_1}{64} - \frac{3\sqrt{286}C_3}{64} - \frac{5\sqrt{26}C_5}{64} - \frac{\sqrt{14}C_7}{64}$
62	A''	$\mathtt{A''}$	6	–	$\mathbb{G}_7^{(h,A'',6)}$	$\mathtt{Gh(7,A'',6,)}$	C_6
63	A''	$\mathtt{A''}$	7	–	$\mathbb{G}_7^{(h,A'',7)}$	$\mathtt{Gh(7,A'',7,)}$	$-\frac{15\sqrt{6}C_1}{64} + \frac{19\sqrt{2}C_3}{64} - \frac{\sqrt{22}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
64	A''	$\mathtt{A''}$	8	–	$\mathbb{G}_7^{(h,A'',8)}$	$\mathtt{Gh(7,A'',8,)}$	C_2

表9 rank 8

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
65	A'	$\mathtt{A'}$	1	–	$\mathbb{G}_8^{(h,A',1)}$	$\mathtt{Gh(8,A',1,)}$	$-\frac{\sqrt{715}S_1}{32} - \frac{\sqrt{273}S_3}{32} - \frac{\sqrt{35}S_5}{32} - \frac{S_7}{32}$
66	A'	$\mathtt{A'}$	2	–	$\mathbb{G}_8^{(h,A',2)}$	$\mathtt{Gh(8,A',2,)}$	S_8
67	A'	$\mathtt{A'}$	3	–	$\mathbb{G}_8^{(h,A',3)}$	$\mathtt{Gh(8,A',3,)}$	$-\frac{\sqrt{77}S_1}{32} + \frac{5\sqrt{15}S_3}{32} - \frac{3\sqrt{13}S_5}{32} - \frac{\sqrt{455}S_7}{32}$
68	A'	$\mathtt{A'}$	4	–	$\mathbb{G}_8^{(h,A',4)}$	$\mathtt{Gh(8,A',4,)}$	S_4
69	A'	$\mathtt{A'}$	5	–	$\mathbb{G}_8^{(h,A',5)}$	$\mathtt{Gh(8,A',5,)}$	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{910}S_3}{64} + \frac{7\sqrt{42}S_5}{64} + \frac{3\sqrt{30}S_7}{64}$
70	A'	$\mathtt{A'}$	6	–	$\mathbb{G}_8^{(h,A',6)}$	$\mathtt{Gh(8,A',6,)}$	S_6
71	A'	$\mathtt{A'}$	7	–	$\mathbb{G}_8^{(h,A',7)}$	$\mathtt{Gh(8,A',7,)}$	$-\frac{\sqrt{70}S_1}{64} + \frac{3\sqrt{66}S_3}{64} - \frac{\sqrt{1430}S_5}{64} + \frac{\sqrt{2002}S_7}{64}$
72	A'	$\mathtt{A'}$	8	–	$\mathbb{G}_8^{(h,A',8)}$	$\mathtt{Gh(8,A',8,)}$	S_2
73	A''	$\mathtt{A''}$	1	–	$\mathbb{G}_8^{(h,A'',1)}$	$\mathtt{Gh(8,A'',1,)}$	$\frac{\sqrt{33}C_0}{8} + \frac{\sqrt{21}C_4}{12} + \frac{\sqrt{195}C_8}{24}$
74	A''	$\mathtt{A''}$	2	–	$\mathbb{G}_8^{(h,A'',2)}$	$\mathtt{Gh(8,A'',2,)}$	$-\frac{\sqrt{286}C_0}{32} + \frac{\sqrt{182}C_4}{16} + \frac{\sqrt{10}C_8}{32}$
75	A''	$\mathtt{A''}$	3	–	$\mathbb{G}_8^{(h,A'',3)}$	$\mathtt{Gh(8,A'',3,)}$	C_6
76	A''	$\mathtt{A''}$	4	–	$\mathbb{G}_8^{(h,A'',4)}$	$\mathtt{Gh(8,A'',4,)}$	$-\frac{\sqrt{210}C_0}{32} - \frac{\sqrt{330}C_4}{48} + \frac{\sqrt{6006}C_8}{96}$
77	A''	$\mathtt{A''}$	5	–	$\mathbb{G}_8^{(h,A'',5)}$	$\mathtt{Gh(8,A'',5,)}$	C_2
78	A''	$\mathtt{A''}$	6	–	$\mathbb{G}_8^{(h,A'',6)}$	$\mathtt{Gh(8,A'',6,)}$	$\frac{\sqrt{715}C_1}{32} - \frac{\sqrt{273}C_3}{32} + \frac{\sqrt{35}C_5}{32} - \frac{C_7}{32}$
79	A''	$\mathtt{A''}$	7	–	$\mathbb{G}_8^{(h,A'',7)}$	$\mathtt{Gh(8,A'',7,)}$	$\frac{\sqrt{77}C_1}{32} + \frac{5\sqrt{15}C_3}{32} + \frac{3\sqrt{13}C_5}{32} - \frac{\sqrt{455}C_7}{32}$
80	A''	$\mathtt{A''}$	8	–	$\mathbb{G}_8^{(h,A'',8)}$	$\mathtt{Gh(8,A'',8,)}$	$-\frac{\sqrt{858}C_1}{64} - \frac{\sqrt{910}C_3}{64} + \frac{7\sqrt{42}C_5}{64} - \frac{3\sqrt{30}C_7}{64}$
81	A''	$\mathtt{A''}$	9	–	$\mathbb{G}_8^{(h,A'',9)}$	$\mathtt{Gh(8,A'',9,)}$	$-\frac{\sqrt{70}C_1}{64} - \frac{3\sqrt{66}C_3}{64} - \frac{\sqrt{1430}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$

表 10   rank 9

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
82	A'	A'	1	–	$\mathbb{G}_9^{(h,A',1)}$	Gh(9,A',1,)	$\frac{\sqrt{102}S_4}{12} - \frac{\sqrt{42}S_8}{12}$
83	A'	A'	2	–	$\mathbb{G}_9^{(h,A',2)}$	Gh(9,A',2,)	$\frac{\sqrt{3}S_2}{4} - \frac{\sqrt{13}S_6}{4}$
84	A'	A'	3	–	$\mathbb{G}_9^{(h,A',3)}$	Gh(9,A',3,)	$\frac{\sqrt{42}S_4}{12} + \frac{\sqrt{102}S_8}{12}$
85	A'	A'	4	–	$\mathbb{G}_9^{(h,A',4)}$	Gh(9,A',4,)	$-\frac{\sqrt{13}S_2}{4} - \frac{\sqrt{3}S_6}{4}$
86	A'	A'	5	–	$\mathbb{G}_9^{(h,A',5)}$	Gh(9,A',5,)	$\frac{21\sqrt{5}S_1}{128} + \frac{\sqrt{2310}S_3}{128} + \frac{3\sqrt{286}S_5}{128} + \frac{3\sqrt{1430}S_7}{256} + \frac{\sqrt{24310}S_9}{256}$
87	A'	A'	6	–	$\mathbb{G}_9^{(h,A',6)}$	Gh(9,A',6,)	$\frac{\sqrt{2431}S_1}{128} - \frac{\sqrt{9282}S_3}{128} + \frac{5\sqrt{170}S_5}{128} - \frac{7\sqrt{34}S_7}{256} + \frac{3\sqrt{2}S_9}{256}$
88	A'	A'	7	–	$\mathbb{G}_9^{(h,A',7)}$	Gh(9,A',7,)	$\frac{\sqrt{1001}S_1}{64} + \frac{\sqrt{78}S_3}{64} - \frac{3\sqrt{70}S_5}{64} - \frac{23\sqrt{14}S_7}{128} + \frac{3\sqrt{238}S_9}{128}$
89	A'	A'	8	–	$\mathbb{G}_9^{(h,A',8)}$	Gh(9,A',8,)	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{91}S_3}{32} + \frac{5\sqrt{15}S_5}{32} - \frac{21\sqrt{3}S_7}{64} + \frac{\sqrt{51}S_9}{64}$
90	A'	A'	9	–	$\mathbb{G}_9^{(h,A',9)}$	Gh(9,A',9,)	$-\frac{7\sqrt{22}S_1}{64} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{65}S_5}{32} + \frac{\sqrt{13}S_7}{64} + \frac{3\sqrt{221}S_9}{64}$
91	A''	A''	1	–	$\mathbb{G}_9^{(h,A'',1)}$	Gh(9,A'',1,)	$\frac{21\sqrt{5}C_1}{128} - \frac{\sqrt{2310}C_3}{128} + \frac{3\sqrt{286}C_5}{128} - \frac{3\sqrt{1430}C_7}{256} + \frac{\sqrt{24310}C_9}{256}$
92	A''	A''	2	–	$\mathbb{G}_9^{(h,A'',2)}$	Gh(9,A'',2,)	C_0
93	A''	A''	3	–	$\mathbb{G}_9^{(h,A'',3)}$	Gh(9,A'',3,)	$\frac{\sqrt{2431}C_1}{128} + \frac{\sqrt{9282}C_3}{128} + \frac{5\sqrt{170}C_5}{128} + \frac{7\sqrt{34}C_7}{256} + \frac{3\sqrt{2}C_9}{256}$
94	A''	A''	4	–	$\mathbb{G}_9^{(h,A'',4)}$	Gh(9,A'',4,)	C_8
95	A''	A''	5	–	$\mathbb{G}_9^{(h,A'',5)}$	Gh(9,A'',5,)	$\frac{\sqrt{1001}C_1}{64} - \frac{\sqrt{78}C_3}{64} - \frac{3\sqrt{70}C_5}{64} + \frac{23\sqrt{14}C_7}{128} + \frac{3\sqrt{238}C_9}{128}$
96	A''	A''	6	–	$\mathbb{G}_9^{(h,A'',6)}$	Gh(9,A'',6,)	C_4
97	A''	A''	7	–	$\mathbb{G}_9^{(h,A'',7)}$	Gh(9,A'',7,)	$\frac{\sqrt{858}C_1}{64} + \frac{\sqrt{91}C_3}{32} - \frac{5\sqrt{15}C_5}{32} - \frac{21\sqrt{3}C_7}{64} - \frac{\sqrt{51}C_9}{64}$
98	A''	A''	8	–	$\mathbb{G}_9^{(h,A'',8)}$	Gh(9,A'',8,)	C_6
99	A''	A''	9	–	$\mathbb{G}_9^{(h,A'',9)}$	Gh(9,A'',9,)	$\frac{7\sqrt{22}C_1}{64} - \frac{3\sqrt{21}C_3}{32} + \frac{\sqrt{65}C_5}{32} + \frac{\sqrt{13}C_7}{64} - \frac{3\sqrt{221}C_9}{64}$
100	A''	A''	10	–	$\mathbb{G}_9^{(h,A'',10)}$	Gh(9,A'',10,)	C_2

表 11   rank 10

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
101	A'	A'	1	–	$\mathbb{G}_{10}^{(h,A',1)}$	Gh(10,A',1,)	$\frac{\sqrt{221}S_1}{32} - \frac{\sqrt{102}S_3}{32} - \frac{\sqrt{510}S_5}{32} - \frac{11\sqrt{6}S_7}{64} - \frac{\sqrt{38}S_9}{64}$
102	A'	A'	2	–	$\mathbb{G}_{10}^{(h,A',2)}$	Gh(10,A',2,)	S_8
103	A'	A'	3	–	$\mathbb{G}_{10}^{(h,A',3)}$	Gh(10,A',3,)	$\frac{\sqrt{39}S_1}{32} - \frac{11\sqrt{2}S_3}{32} + \frac{5\sqrt{10}S_5}{32} - \frac{\sqrt{34}S_7}{64} - \frac{\sqrt{1938}S_9}{64}$
104	A'	A'	4	–	$\mathbb{G}_{10}^{(h,A',4)}$	Gh(10,A',4,)	S_4
105	A'	A'	5	–	$\mathbb{G}_{10}^{(h,A',5)}$	Gh(10,A',5,)	$\frac{\sqrt{41990}S_1}{256} + \frac{\sqrt{4845}S_3}{128} + \frac{\sqrt{969}S_5}{128} + \frac{\sqrt{285}S_7}{256} + \frac{\sqrt{5}S_9}{256}$
106	A'	A'	6	–	$\mathbb{G}_{10}^{(h,A',6)}$	Gh(10,A',6,)	S_{10}
107	A'	A'	7	–	$\mathbb{G}_{10}^{(h,A',7)}$	Gh(10,A',7,)	$\frac{9\sqrt{78}S_1}{256} - \frac{69S_3}{128} - \frac{\sqrt{5}S_5}{128} + \frac{43\sqrt{17}S_7}{256} + \frac{3\sqrt{969}S_9}{256}$
108	A'	A'	8	–	$\mathbb{G}_{10}^{(h,A',8)}$	Gh(10,A',8,)	S_6
109	A'	A'	9	–	$\mathbb{G}_{10}^{(h,A',9)}$	Gh(10,A',9,)	$\frac{7\sqrt{3}S_1}{128} - \frac{7\sqrt{26}S_3}{128} + \frac{5\sqrt{130}S_5}{128} - \frac{7\sqrt{442}S_7}{256} + \frac{\sqrt{25194}S_9}{256}$
110	A'	A'	10	–	$\mathbb{G}_{10}^{(h,A',10)}$	Gh(10,A',10,)	S_2
111	A''	A''	1	–	$\mathbb{G}_{10}^{(h,A'',1)}$	Gh(10,A'',1,)	$\frac{\sqrt{390}C_0}{48} - \frac{\sqrt{22}C_4}{8} - \frac{\sqrt{1122}C_8}{48}$
112	A''	A''	2	–	$\mathbb{G}_{10}^{(h,A'',2)}$	Gh(10,A'',2,)	$-\frac{\sqrt{85}C_{10}}{16} + \frac{\sqrt{1482}C_2}{48} + \frac{\sqrt{57}C_6}{48}$
113	A''	A''	3	–	$\mathbb{G}_{10}^{(h,A'',3)}$	Gh(10,A'',3,)	$\frac{11\sqrt{420189}C_0}{8988} + \frac{\sqrt{827645}C_4}{1498} - \frac{\sqrt{146055}C_8}{8988}$
114	A''	A''	4	–	$\mathbb{G}_{10}^{(h,A'',4)}$	Gh(10,A'',4,)	$\frac{\sqrt{370006}C_{10}}{749} + \frac{\sqrt{190995}C_2}{749}$
115	A''	A''	5	–	$\mathbb{G}_{10}^{(h,A'',5)}$	Gh(10,A'',5,)	$\frac{3\sqrt{3213210}C_0}{11984} - \frac{83\sqrt{1498}C_4}{5992} + \frac{31\sqrt{76398}C_8}{11984}$
116	A''	A''	6	–	$\mathbb{G}_{10}^{(h,A'',6)}$	Gh(10,A'',6,)	$\frac{\sqrt{1209635}C_{10}}{11984} - \frac{19\sqrt{58422}C_2}{35952} + \frac{\sqrt{2247}C_6}{48}$
117	A''	A''	7	–	$\mathbb{G}_{10}^{(h,A'',7)}$	Gh(10,A'',7,)	$-\frac{\sqrt{221}C_1}{32} - \frac{\sqrt{102}C_3}{32} + \frac{\sqrt{510}C_5}{32} - \frac{11\sqrt{6}C_7}{64} + \frac{\sqrt{38}C_9}{64}$
118	A''	A''	8	–	$\mathbb{G}_{10}^{(h,A'',8)}$	Gh(10,A'',8,)	$-\frac{\sqrt{39}C_1}{32} - \frac{11\sqrt{2}C_3}{32} - \frac{5\sqrt{10}C_5}{32} - \frac{\sqrt{34}C_7}{64} + \frac{\sqrt{1938}C_9}{64}$
119	A''	A''	9	–	$\mathbb{G}_{10}^{(h,A'',9)}$	Gh(10,A'',9,)	$\frac{\sqrt{41990}C_1}{256} - \frac{\sqrt{4845}C_3}{128} + \frac{\sqrt{969}C_5}{128} - \frac{\sqrt{285}C_7}{256} + \frac{\sqrt{5}C_9}{256}$
120	A''	A''	10	–	$\mathbb{G}_{10}^{(h,A'',10)}$	Gh(10,A'',10,)	$\frac{9\sqrt{78}C_1}{256} + \frac{69C_3}{128} - \frac{\sqrt{5}C_5}{128} - \frac{43\sqrt{17}C_7}{256} + \frac{3\sqrt{969}C_9}{256}$
121	A''	A''	11	–	$\mathbb{G}_{10}^{(h,A'',11)}$	Gh(10,A'',11,)	$\frac{7\sqrt{3}C_1}{128} + \frac{7\sqrt{26}C_3}{128} + \frac{5\sqrt{130}C_5}{128} + \frac{7\sqrt{442}C_7}{256} + \frac{\sqrt{25194}C_9}{256}$

表 12 rank 11

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
122	A'	A'	1	–	$\mathbb{G}_{11}^{(h,A',1)}$	Gh$(11,A',1,)$	$\frac{\sqrt{798}S_{10}}{48} + \frac{\sqrt{255}S_2}{24} + \frac{3\sqrt{6}S_6}{16}$
123	A'	A'	2	–	$\mathbb{G}_{11}^{(h,A',2)}$	Gh$(11,A',2,)$	S_8
124	A'	A'	3	–	$\mathbb{G}_{11}^{(h,A',3)}$	Gh$(11,A',3,)$	$-\frac{\sqrt{210}S_{10}}{96} + \frac{\sqrt{969}S_2}{48} - \frac{\sqrt{570}S_6}{32}$
125	A'	A'	4	–	$\mathbb{G}_{11}^{(h,A',4)}$	Gh$(11,A',4,)$	S_4
126	A'	A'	5	–	$\mathbb{G}_{11}^{(h,A',5)}$	Gh$(11,A',5,)$	$-\frac{\sqrt{646}S_{10}}{32} + \frac{\sqrt{35}S_2}{16} + \frac{\sqrt{238}S_6}{32}$
127	A'	A'	6	–	$\mathbb{G}_{11}^{(h,A',6)}$	Gh$(11,A',6,)$	$-\frac{21\sqrt{66}S_1}{512} - \frac{\sqrt{88179}S_{11}}{512} - \frac{\sqrt{30030}S_3}{512} - \frac{15\sqrt{143}S_5}{512} - \frac{\sqrt{36465}S_7}{512} - \frac{\sqrt{46189}S_9}{512}$
128	A'	A'	7	–	$\mathbb{G}_{11}^{(h,A',7)}$	Gh$(11,A',7,)$	$-\frac{\sqrt{41990}S_1}{512} - \frac{\sqrt{385}S_{11}}{512} + \frac{3\sqrt{4522}S_3}{512} + \frac{3\sqrt{4845}S_5}{512} - \frac{77\sqrt{19}S_7}{512} + \frac{39\sqrt{15}S_9}{512}$
129	A'	A'	8	–	$\mathbb{G}_{11}^{(h,A',8)}$	Gh$(11,A',8,)$	$-\frac{5\sqrt{546}S_1}{256} - \frac{\sqrt{10659}S_{11}}{256} - \frac{11\sqrt{30}S_3}{256} + \frac{13\sqrt{7}S_5}{256} + \frac{3\sqrt{1785}S_7}{256} + \frac{3\sqrt{2261}S_9}{256}$
130	A'	A'	9	–	$\mathbb{G}_{11}^{(h,A',9)}$	Gh$(11,A',9,)$	$\frac{\sqrt{29393}S_1}{512} - \frac{\sqrt{22}S_{11}}{1024} - \frac{9\sqrt{1615}S_3}{512} + \frac{5\sqrt{13566}S_5}{1024} - \frac{7\sqrt{1330}S_7}{1024} + \frac{9\sqrt{42}S_9}{1024}$
131	A'	A'	10	–	$\mathbb{G}_{11}^{(h,A',10)}$	Gh$(11,A',10,)$	$\frac{15\sqrt{221}S_1}{512} - \frac{3\sqrt{2926}S_{11}}{1024} - \frac{\sqrt{595}S_3}{512} - \frac{53\sqrt{102}S_5}{1024} - \frac{105\sqrt{10}S_7}{1024} + \frac{61\sqrt{114}S_9}{1024}$
132	A'	A'	11	–	$\mathbb{G}_{11}^{(h,A',11)}$	Gh$(11,A',11,)$	$\frac{21\sqrt{130}S_1}{512} - \frac{\sqrt{124355}S_{11}}{512} + \frac{57\sqrt{14}S_3}{512} + \frac{41\sqrt{15}S_5}{512} + \frac{17\sqrt{17}S_7}{512} - \frac{\sqrt{4845}S_9}{512}$
133	A''	A''	1	–	$\mathbb{G}_{11}^{(h,A'',1)}$	Gh$(11,A'',1,)$	$-\frac{21\sqrt{66}C_1}{512} + \frac{\sqrt{88179}C_{11}}{512} + \frac{\sqrt{30030}C_3}{512} - \frac{15\sqrt{143}C_5}{512} + \frac{\sqrt{36465}C_7}{512} - \frac{\sqrt{46189}C_9}{512}$
134	A''	A''	2	–	$\mathbb{G}_{11}^{(h,A'',2)}$	Gh$(11,A'',2,)$	C_0
135	A''	A''	3	–	$\mathbb{G}_{11}^{(h,A'',3)}$	Gh$(11,A'',3,)$	$-\frac{\sqrt{41990}C_1}{512} + \frac{\sqrt{385}C_{11}}{512} - \frac{3\sqrt{4522}C_3}{512} + \frac{3\sqrt{4845}C_5}{512} + \frac{77\sqrt{19}C_7}{512} + \frac{39\sqrt{15}C_9}{512}$
136	A''	A''	4	–	$\mathbb{G}_{11}^{(h,A'',4)}$	Gh$(11,A'',4,)$	C_8
137	A''	A''	5	–	$\mathbb{G}_{11}^{(h,A'',5)}$	Gh$(11,A'',5,)$	$-\frac{5\sqrt{546}C_1}{256} + \frac{\sqrt{10659}C_{11}}{256} + \frac{11\sqrt{30}C_3}{256} + \frac{13\sqrt{7}C_5}{256} - \frac{3\sqrt{1785}C_7}{256} + \frac{3\sqrt{2261}C_9}{256}$
138	A''	A''	6	–	$\mathbb{G}_{11}^{(h,A'',6)}$	Gh$(11,A'',6,)$	C_4
139	A''	A''	7	–	$\mathbb{G}_{11}^{(h,A'',7)}$	Gh$(11,A'',7,)$	$-\frac{\sqrt{29393}C_1}{512} - \frac{\sqrt{22}C_{11}}{1024} - \frac{9\sqrt{1615}C_3}{512} - \frac{5\sqrt{13566}C_5}{1024} - \frac{7\sqrt{1330}C_7}{1024} - \frac{9\sqrt{42}C_9}{1024}$
140	A''	A''	8	–	$\mathbb{G}_{11}^{(h,A'',8)}$	Gh$(11,A'',8,)$	C_{10}
141	A''	A''	9	–	$\mathbb{G}_{11}^{(h,A'',9)}$	Gh$(11,A'',9,)$	$-\frac{15\sqrt{221}C_1}{512} - \frac{3\sqrt{2926}C_{11}}{1024} - \frac{\sqrt{595}C_3}{512} + \frac{53\sqrt{102}C_5}{1024} - \frac{105\sqrt{10}C_7}{1024} - \frac{61\sqrt{114}C_9}{1024}$
142	A''	A''	10	–	$\mathbb{G}_{11}^{(h,A'',10)}$	Gh$(11,A'',10,)$	C_6
143	A''	A''	11	–	$\mathbb{G}_{11}^{(h,A'',11)}$	Gh$(11,A'',11,)$	$-\frac{21\sqrt{130}C_1}{512} - \frac{\sqrt{124355}C_{11}}{512} + \frac{57\sqrt{14}C_3}{512} - \frac{41\sqrt{15}C_5}{512} + \frac{17\sqrt{17}C_7}{512} + \frac{\sqrt{4845}C_9}{512}$
144	A''	A''	12	–	$\mathbb{G}_{11}^{(h,A'',12)}$	Gh$(11,A'',12,)$	C_2