

# No. 2 $C_i = -1$ [ triclinic ] (axial)

表 1 rank 0

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
1	$A_u$	<b>Au</b>	—	—	$\mathbb{G}_0^{(h,A_u)}$	<b>Gh(0, Au, , )</b>	$C_0$

表 2 rank 1

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
2	$A_g$	<b>Ag</b>	1	—	$\mathbb{G}_1^{(h,A_g,1)}$	<b>Gh(1, Ag, 1, )</b>	$C_1$
3	$A_g$	<b>Ag</b>	2	—	$\mathbb{G}_1^{(h,A_g,2)}$	<b>Gh(1, Ag, 2, )</b>	$S_1$
4	$A_g$	<b>Ag</b>	3	—	$\mathbb{G}_1^{(h,A_g,3)}$	<b>Gh(1, Ag, 3, )</b>	$C_0$

表 3 rank 2

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
5	$A_u$	<b>Au</b>	1	—	$\mathbb{G}_2^{(h,A_u,1)}$	<b>Gh(2, Au, 1, )</b>	$C_0$
6	$A_u$	<b>Au</b>	2	—	$\mathbb{G}_2^{(h,A_u,2)}$	<b>Gh(2, Au, 2, )</b>	$C_2$
7	$A_u$	<b>Au</b>	3	—	$\mathbb{G}_2^{(h,A_u,3)}$	<b>Gh(2, Au, 3, )</b>	$S_1$
8	$A_u$	<b>Au</b>	4	—	$\mathbb{G}_2^{(h,A_u,4)}$	<b>Gh(2, Au, 4, )</b>	$C_1$
9	$A_u$	<b>Au</b>	5	—	$\mathbb{G}_2^{(h,A_u,5)}$	<b>Gh(2, Au, 5, )</b>	$S_2$

表 4 rank 3

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
10	$A_g$	<b>Ag</b>	1	—	$\mathbb{G}_3^{(h,A_g,1)}$	<b>Gh(3, Ag, 1, )</b>	$S_2$
11	$A_g$	<b>Ag</b>	2	—	$\mathbb{G}_3^{(h,A_g,2)}$	<b>Gh(3, Ag, 2, )</b>	$-\frac{\sqrt{6}C_1}{4} + \frac{\sqrt{10}C_3}{4}$
12	$A_g$	<b>Ag</b>	3	—	$\mathbb{G}_3^{(h,A_g,3)}$	<b>Gh(3, Ag, 3, )</b>	$-\frac{\sqrt{6}S_1}{4} - \frac{\sqrt{10}S_3}{4}$
13	$A_g$	<b>Ag</b>	4	—	$\mathbb{G}_3^{(h,A_g,4)}$	<b>Gh(3, Ag, 4, )</b>	$C_0$
14	$A_g$	<b>Ag</b>	5	—	$\mathbb{G}_3^{(h,A_g,5)}$	<b>Gh(3, Ag, 5, )</b>	$-\frac{\sqrt{10}C_1}{4} - \frac{\sqrt{6}C_3}{4}$
15	$A_g$	<b>Ag</b>	6	—	$\mathbb{G}_3^{(h,A_g,6)}$	<b>Gh(3, Ag, 6, )</b>	$\frac{\sqrt{10}S_1}{4} - \frac{\sqrt{6}S_3}{4}$
16	$A_g$	<b>Ag</b>	7	—	$\mathbb{G}_3^{(h,A_g,7)}$	<b>Gh(3, Ag, 7, )</b>	$C_2$

表 5 rank 4

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
17	$A_u$	<b>Au</b>	1	—	$\mathbb{G}_4^{(h,A_u,1)}$	<b>Gh(4, Au, 1, )</b>	$\frac{\sqrt{21}C_0}{6} + \frac{\sqrt{15}C_4}{6}$
18	$A_u$	<b>Au</b>	2	—	$\mathbb{G}_4^{(h,A_u,2)}$	<b>Gh(4, Au, 2, )</b>	$\frac{\sqrt{15}C_0}{6} - \frac{\sqrt{21}C_4}{6}$
19	$A_u$	<b>Au</b>	3	—	$\mathbb{G}_4^{(h,A_u,3)}$	<b>Gh(4, Au, 3, )</b>	$-C_2$
20	$A_u$	<b>Au</b>	4	—	$\mathbb{G}_4^{(h,A_u,4)}$	<b>Gh(4, Au, 4, )</b>	$-\frac{\sqrt{14}S_1}{4} - \frac{\sqrt{2}S_3}{4}$
21	$A_u$	<b>Au</b>	5	—	$\mathbb{G}_4^{(h,A_u,5)}$	<b>Gh(4, Au, 5, )</b>	$\frac{\sqrt{14}C_1}{4} - \frac{\sqrt{2}C_3}{4}$
22	$A_u$	<b>Au</b>	6	—	$\mathbb{G}_4^{(h,A_u,6)}$	<b>Gh(4, Au, 6, )</b>	$S_4$
23	$A_u$	<b>Au</b>	7	—	$\mathbb{G}_4^{(h,A_u,7)}$	<b>Gh(4, Au, 7, )</b>	$-\frac{\sqrt{2}S_1}{4} + \frac{\sqrt{14}S_3}{4}$
24	$A_u$	<b>Au</b>	8	—	$\mathbb{G}_4^{(h,A_u,8)}$	<b>Gh(4, Au, 8, )</b>	$-\frac{\sqrt{2}C_1}{4} - \frac{\sqrt{14}C_3}{4}$
25	$A_u$	<b>Au</b>	9	—	$\mathbb{G}_4^{(h,A_u,9)}$	<b>Gh(4, Au, 9, )</b>	$S_2$

表 6 rank 5

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
26	$A_g$	Ag	1	—	$\mathbb{G}_5^{(h,A_g,1)}$	Gh(5, Ag, 1, )	$S_4$
27	$A_g$	Ag	2	—	$\mathbb{G}_5^{(h,A_g,2)}$	Gh(5, Ag, 2, )	$-S_2$
28	$A_g$	Ag	3	—	$\mathbb{G}_5^{(h,A_g,3)}$	Gh(5, Ag, 3, )	$\frac{\sqrt{15}C_1}{8} - \frac{\sqrt{70}C_3}{16} + \frac{3\sqrt{14}C_5}{16}$
29	$A_g$	Ag	4	—	$\mathbb{G}_5^{(h,A_g,4)}$	Gh(5, Ag, 4, )	$\frac{\sqrt{15}S_1}{8} + \frac{\sqrt{70}S_3}{16} + \frac{3\sqrt{14}S_5}{16}$
30	$A_g$	Ag	5	—	$\mathbb{G}_5^{(h,A_g,5)}$	Gh(5, Ag, 5, )	$C_0$
31	$A_g$	Ag	6	—	$\mathbb{G}_5^{(h,A_g,6)}$	Gh(5, Ag, 6, )	$\frac{\sqrt{21}C_1}{8} + \frac{9\sqrt{2}C_3}{16} + \frac{\sqrt{10}C_5}{16}$
32	$A_g$	Ag	7	—	$\mathbb{G}_5^{(h,A_g,7)}$	Gh(5, Ag, 7, )	$\frac{\sqrt{21}S_1}{8} - \frac{9\sqrt{2}S_3}{16} + \frac{\sqrt{10}S_5}{16}$
33	$A_g$	Ag	8	—	$\mathbb{G}_5^{(h,A_g,8)}$	Gh(5, Ag, 8, )	$C_4$
34	$A_g$	Ag	9	—	$\mathbb{G}_5^{(h,A_g,9)}$	Gh(5, Ag, 9, )	$\frac{\sqrt{7}C_1}{4} - \frac{\sqrt{6}C_3}{8} - \frac{\sqrt{30}C_5}{8}$
35	$A_g$	Ag	10	—	$\mathbb{G}_5^{(h,A_g,10)}$	Gh(5, Ag, 10, )	$-\frac{\sqrt{7}S_1}{4} - \frac{\sqrt{6}S_3}{8} + \frac{\sqrt{30}S_5}{8}$
36	$A_g$	Ag	11	—	$\mathbb{G}_5^{(h,A_g,11)}$	Gh(5, Ag, 11, )	$C_2$

表 7 rank 6

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
37	$A_u$	Au	1	—	$\mathbb{G}_6^{(h,A_u,1)}$	Gh(6, Au, 1, )	$\frac{\sqrt{2}C_0}{4} - \frac{\sqrt{14}C_4}{4}$
38	$A_u$	Au	2	—	$\mathbb{G}_6^{(h,A_u,2)}$	Gh(6, Au, 2, )	$\frac{\sqrt{11}C_2}{4} - \frac{\sqrt{5}C_6}{4}$
39	$A_u$	Au	3	—	$\mathbb{G}_6^{(h,A_u,3)}$	Gh(6, Au, 3, )	$\frac{\sqrt{14}C_0}{4} + \frac{\sqrt{2}C_4}{4}$
40	$A_u$	Au	4	—	$\mathbb{G}_6^{(h,A_u,4)}$	Gh(6, Au, 4, )	$\frac{\sqrt{5}C_2}{4} + \frac{\sqrt{11}C_6}{4}$
41	$A_u$	Au	5	—	$\mathbb{G}_6^{(h,A_u,5)}$	Gh(6, Au, 5, )	$\frac{\sqrt{3}S_1}{4} - \frac{\sqrt{30}S_3}{8} - \frac{\sqrt{22}S_5}{8}$
42	$A_u$	Au	6	—	$\mathbb{G}_6^{(h,A_u,6)}$	Gh(6, Au, 6, )	$-\frac{\sqrt{3}C_1}{4} - \frac{\sqrt{30}C_3}{8} + \frac{\sqrt{22}C_5}{8}$
43	$A_u$	Au	7	—	$\mathbb{G}_6^{(h,A_u,7)}$	Gh(6, Au, 7, )	$S_4$
44	$A_u$	Au	8	—	$\mathbb{G}_6^{(h,A_u,8)}$	Gh(6, Au, 8, )	$\frac{3\sqrt{22}S_1}{16} + \frac{\sqrt{55}S_3}{16} + \frac{\sqrt{3}S_5}{16}$
45	$A_u$	Au	9	—	$\mathbb{G}_6^{(h,A_u,9)}$	Gh(6, Au, 9, )	$\frac{3\sqrt{22}C_1}{16} - \frac{\sqrt{55}C_3}{16} + \frac{\sqrt{3}C_5}{16}$
46	$A_u$	Au	10	—	$\mathbb{G}_6^{(h,A_u,10)}$	Gh(6, Au, 10, )	$S_6$
47	$A_u$	Au	11	—	$\mathbb{G}_6^{(h,A_u,11)}$	Gh(6, Au, 11, )	$\frac{\sqrt{10}S_1}{16} - \frac{9S_3}{16} + \frac{\sqrt{165}S_5}{16}$
48	$A_u$	Au	12	—	$\mathbb{G}_6^{(h,A_u,12)}$	Gh(6, Au, 12, )	$\frac{\sqrt{10}C_1}{16} + \frac{9C_3}{16} + \frac{\sqrt{165}C_5}{16}$
49	$A_u$	Au	13	—	$\mathbb{G}_6^{(h,A_u,13)}$	Gh(6, Au, 13, )	$S_2$

表 8 rank 7

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
50	$A_g$	Ag	1	—	$\mathbb{G}_7^{(h,A_g,1)}$	Gh(7, Ag, 1, )	$\frac{\sqrt{78}S_2}{12} + \frac{\sqrt{66}S_6}{12}$
51	$A_g$	Ag	2	—	$\mathbb{G}_7^{(h,A_g,2)}$	Gh(7, Ag, 2, )	$S_4$
52	$A_g$	Ag	3	—	$\mathbb{G}_7^{(h,A_g,3)}$	Gh(7, Ag, 3, )	$\frac{\sqrt{66}S_2}{12} - \frac{\sqrt{78}S_6}{12}$
53	$A_g$	Ag	4	—	$\mathbb{G}_7^{(h,A_g,4)}$	Gh(7, Ag, 4, )	$-\frac{5\sqrt{7}C_1}{32} + \frac{3\sqrt{21}C_3}{32} - \frac{\sqrt{231}C_5}{32} + \frac{\sqrt{429}C_7}{32}$
54	$A_g$	Ag	5	—	$\mathbb{G}_7^{(h,A_g,5)}$	Gh(7, Ag, 5, )	$-\frac{5\sqrt{7}S_1}{32} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{231}S_5}{32} - \frac{\sqrt{429}S_7}{32}$
55	$A_g$	Ag	6	—	$\mathbb{G}_7^{(h,A_g,6)}$	Gh(7, Ag, 6, )	$C_0$
56	$A_g$	Ag	7	—	$\mathbb{G}_7^{(h,A_g,7)}$	Gh(7, Ag, 7, )	$-\frac{3\sqrt{33}C_1}{32} - \frac{\sqrt{11}C_3}{32} + \frac{25C_5}{32} + \frac{\sqrt{91}C_7}{32}$
57	$A_g$	Ag	8	—	$\mathbb{G}_7^{(h,A_g,8)}$	Gh(7, Ag, 8, )	$-\frac{3\sqrt{33}S_1}{32} + \frac{\sqrt{11}S_3}{32} + \frac{25S_5}{32} - \frac{\sqrt{91}S_7}{32}$
58	$A_g$	Ag	9	—	$\mathbb{G}_7^{(h,A_g,9)}$	Gh(7, Ag, 9, )	$C_4$
59	$A_g$	Ag	10	—	$\mathbb{G}_7^{(h,A_g,10)}$	Gh(7, Ag, 10, )	$-\frac{\sqrt{858}C_1}{64} - \frac{3\sqrt{286}C_3}{64} - \frac{5\sqrt{26}C_5}{64} - \frac{\sqrt{14}C_7}{64}$
60	$A_g$	Ag	11	—	$\mathbb{G}_7^{(h,A_g,11)}$	Gh(7, Ag, 11, )	$\frac{\sqrt{858}S_1}{64} - \frac{3\sqrt{286}S_3}{64} + \frac{5\sqrt{26}S_5}{64} - \frac{\sqrt{14}S_7}{64}$
61	$A_g$	Ag	12	—	$\mathbb{G}_7^{(h,A_g,12)}$	Gh(7, Ag, 12, )	$C_6$
62	$A_g$	Ag	13	—	$\mathbb{G}_7^{(h,A_g,13)}$	Gh(7, Ag, 13, )	$-\frac{15\sqrt{6}C_1}{64} + \frac{19\sqrt{2}C_3}{64} - \frac{\sqrt{22}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
63	$A_g$	Ag	14	—	$\mathbb{G}_7^{(h,A_g,14)}$	Gh(7, Ag, 14, )	$\frac{15\sqrt{6}S_1}{64} + \frac{19\sqrt{2}S_3}{64} + \frac{\sqrt{22}S_5}{64} - \frac{\sqrt{2002}S_7}{64}$
64	$A_g$	Ag	15	—	$\mathbb{G}_7^{(h,A_g,15)}$	Gh(7, Ag, 15, )	$C_2$

表 9 rank 8

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
65	$A_u$	Au	1	—	$\mathbb{G}_8^{(h,A_u,1)}$	Gh(8, Au, 1, )	$\frac{\sqrt{33}C_0}{8} + \frac{\sqrt{21}C_4}{12} + \frac{\sqrt{195}C_8}{24}$
66	$A_u$	Au	2	—	$\mathbb{G}_8^{(h,A_u,2)}$	Gh(8, Au, 2, )	$-\frac{\sqrt{286}C_0}{32} + \frac{\sqrt{182}C_4}{16} + \frac{\sqrt{10}C_8}{32}$
67	$A_u$	Au	3	—	$\mathbb{G}_8^{(h,A_u,3)}$	Gh(8, Au, 3, )	$C_6$
68	$A_u$	Au	4	—	$\mathbb{G}_8^{(h,A_u,4)}$	Gh(8, Au, 4, )	$-\frac{\sqrt{210}C_0}{32} - \frac{\sqrt{330}C_4}{48} + \frac{\sqrt{6006}C_8}{96}$
69	$A_u$	Au	5	—	$\mathbb{G}_8^{(h,A_u,5)}$	Gh(8, Au, 5, )	$C_2$
70	$A_u$	Au	6	—	$\mathbb{G}_8^{(h,A_u,6)}$	Gh(8, Au, 6, )	$-\frac{\sqrt{715}S_1}{32} - \frac{\sqrt{273}S_3}{32} - \frac{\sqrt{35}S_5}{32} - \frac{S_7}{32}$
71	$A_u$	Au	7	—	$\mathbb{G}_8^{(h,A_u,7)}$	Gh(8, Au, 7, )	$\frac{\sqrt{715}C_1}{32} - \frac{\sqrt{273}C_3}{32} + \frac{\sqrt{35}C_5}{32} - \frac{C_7}{32}$
72	$A_u$	Au	8	—	$\mathbb{G}_8^{(h,A_u,8)}$	Gh(8, Au, 8, )	$S_8$
73	$A_u$	Au	9	—	$\mathbb{G}_8^{(h,A_u,9)}$	Gh(8, Au, 9, )	$-\frac{\sqrt{77}S_1}{32} + \frac{5\sqrt{15}S_3}{32} - \frac{3\sqrt{13}S_5}{32} - \frac{\sqrt{455}S_7}{32}$
74	$A_u$	Au	10	—	$\mathbb{G}_8^{(h,A_u,10)}$	Gh(8, Au, 10, )	$\frac{\sqrt{77}C_1}{32} + \frac{5\sqrt{15}C_3}{32} + \frac{3\sqrt{13}C_5}{32} - \frac{\sqrt{455}C_7}{32}$
75	$A_u$	Au	11	—	$\mathbb{G}_8^{(h,A_u,11)}$	Gh(8, Au, 11, )	$S_4$
76	$A_u$	Au	12	—	$\mathbb{G}_8^{(h,A_u,12)}$	Gh(8, Au, 12, )	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{910}S_3}{64} + \frac{7\sqrt{42}S_5}{64} + \frac{3\sqrt{30}S_7}{64}$
77	$A_u$	Au	13	—	$\mathbb{G}_8^{(h,A_u,13)}$	Gh(8, Au, 13, )	$-\frac{\sqrt{858}C_1}{64} - \frac{\sqrt{910}C_3}{64} + \frac{7\sqrt{42}C_5}{64} - \frac{3\sqrt{30}C_7}{64}$
78	$A_u$	Au	14	—	$\mathbb{G}_8^{(h,A_u,14)}$	Gh(8, Au, 14, )	$S_6$
79	$A_u$	Au	15	—	$\mathbb{G}_8^{(h,A_u,15)}$	Gh(8, Au, 15, )	$-\frac{\sqrt{70}S_1}{64} + \frac{3\sqrt{66}S_3}{64} - \frac{\sqrt{1430}S_5}{64} + \frac{\sqrt{2002}S_7}{64}$
80	$A_u$	Au	16	—	$\mathbb{G}_8^{(h,A_u,16)}$	Gh(8, Au, 16, )	$-\frac{\sqrt{70}C_1}{64} - \frac{3\sqrt{66}C_3}{64} - \frac{\sqrt{1430}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
81	$A_u$	Au	17	—	$\mathbb{G}_8^{(h,A_u,17)}$	Gh(8, Au, 17, )	$S_2$

表 10 rank 9

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
82	$A_g$	Ag	1	—	$\mathbb{G}_9^{(h,A_g,1)}$	Gh(9, Ag, 1, )	$\frac{\sqrt{102}S_4}{12} - \frac{\sqrt{42}S_8}{12}$
83	$A_g$	Ag	2	—	$\mathbb{G}_9^{(h,A_g,2)}$	Gh(9, Ag, 2, )	$\frac{\sqrt{3}S_2}{4} - \frac{\sqrt{13}S_6}{4}$
84	$A_g$	Ag	3	—	$\mathbb{G}_9^{(h,A_g,3)}$	Gh(9, Ag, 3, )	$\frac{\sqrt{42}S_4}{12} + \frac{\sqrt{102}S_8}{12}$
85	$A_g$	Ag	4	—	$\mathbb{G}_9^{(h,A_g,4)}$	Gh(9, Ag, 4, )	$-\frac{\sqrt{13}S_2}{4} - \frac{\sqrt{3}S_6}{4}$
86	$A_g$	Ag	5	—	$\mathbb{G}_9^{(h,A_g,5)}$	Gh(9, Ag, 5, )	$\frac{21\sqrt{5}C_1}{128} - \frac{\sqrt{2310}C_3}{128} + \frac{3\sqrt{286}C_5}{128} - \frac{3\sqrt{1430}C_7}{256} + \frac{\sqrt{24310}C_9}{256}$
87	$A_g$	Ag	6	—	$\mathbb{G}_9^{(h,A_g,6)}$	Gh(9, Ag, 6, )	$\frac{21\sqrt{5}S_1}{128} + \frac{\sqrt{2310}S_3}{128} + \frac{3\sqrt{286}S_5}{128} + \frac{3\sqrt{1430}S_7}{256} + \frac{\sqrt{24310}S_9}{256}$
88	$A_g$	Ag	7	—	$\mathbb{G}_9^{(h,A_g,7)}$	Gh(9, Ag, 7, )	$C_0$
89	$A_g$	Ag	8	—	$\mathbb{G}_9^{(h,A_g,8)}$	Gh(9, Ag, 8, )	$\frac{\sqrt{2431}C_1}{128} + \frac{\sqrt{9282}C_3}{128} + \frac{5\sqrt{170}C_5}{128} + \frac{7\sqrt{34}C_7}{256} + \frac{3\sqrt{2}C_9}{256}$
90	$A_g$	Ag	9	—	$\mathbb{G}_9^{(h,A_g,9)}$	Gh(9, Ag, 9, )	$\frac{\sqrt{2431}S_1}{128} - \frac{\sqrt{9282}S_3}{128} + \frac{5\sqrt{170}S_5}{128} - \frac{7\sqrt{34}S_7}{256} + \frac{3\sqrt{2}S_9}{256}$
91	$A_g$	Ag	10	—	$\mathbb{G}_9^{(h,A_g,10)}$	Gh(9, Ag, 10, )	$C_8$
92	$A_g$	Ag	11	—	$\mathbb{G}_9^{(h,A_g,11)}$	Gh(9, Ag, 11, )	$\frac{\sqrt{1001}C_1}{64} - \frac{\sqrt{78}C_3}{64} - \frac{3\sqrt{70}C_5}{64} + \frac{23\sqrt{14}C_7}{128} + \frac{3\sqrt{238}C_9}{128}$
93	$A_g$	Ag	12	—	$\mathbb{G}_9^{(h,A_g,12)}$	Gh(9, Ag, 12, )	$\frac{\sqrt{1001}S_1}{64} + \frac{\sqrt{78}S_3}{64} - \frac{3\sqrt{70}S_5}{64} - \frac{23\sqrt{14}S_7}{128} + \frac{3\sqrt{238}S_9}{128}$
94	$A_g$	Ag	13	—	$\mathbb{G}_9^{(h,A_g,13)}$	Gh(9, Ag, 13, )	$C_4$
95	$A_g$	Ag	14	—	$\mathbb{G}_9^{(h,A_g,14)}$	Gh(9, Ag, 14, )	$\frac{\sqrt{858}C_1}{64} + \frac{\sqrt{91}C_3}{32} - \frac{5\sqrt{15}C_5}{32} - \frac{21\sqrt{3}C_7}{64} - \frac{\sqrt{51}C_9}{64}$
96	$A_g$	Ag	15	—	$\mathbb{G}_9^{(h,A_g,15)}$	Gh(9, Ag, 15, )	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{91}S_3}{32} + \frac{5\sqrt{15}S_5}{32} - \frac{21\sqrt{3}S_7}{64} + \frac{\sqrt{51}S_9}{64}$
97	$A_g$	Ag	16	—	$\mathbb{G}_9^{(h,A_g,16)}$	Gh(9, Ag, 16, )	$C_6$
98	$A_g$	Ag	17	—	$\mathbb{G}_9^{(h,A_g,17)}$	Gh(9, Ag, 17, )	$\frac{7\sqrt{22}C_1}{64} - \frac{3\sqrt{21}C_3}{32} + \frac{\sqrt{65}C_5}{32} + \frac{\sqrt{13}C_7}{64} - \frac{3\sqrt{221}C_9}{64}$
99	$A_g$	Ag	18	—	$\mathbb{G}_9^{(h,A_g,18)}$	Gh(9, Ag, 18, )	$-\frac{7\sqrt{22}S_1}{64} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{65}S_5}{32} + \frac{\sqrt{13}S_7}{64} + \frac{3\sqrt{221}S_9}{64}$
100	$A_g$	Ag	19	—	$\mathbb{G}_9^{(h,A_g,19)}$	Gh(9, Ag, 19, )	$C_2$

表 11 rank 10

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
101	$A_u$	Au	1	—	$\mathbb{G}_{10}^{(h,A_u,1)}$	Gh(10, Au, 1, )	$\frac{\sqrt{390}C_0}{48} - \frac{\sqrt{22}C_4}{8} - \frac{\sqrt{1122}C_8}{48}$
102	$A_u$	Au	2	—	$\mathbb{G}_{10}^{(h,A_u,2)}$	Gh(10, Au, 2, )	$-\frac{\sqrt{85}C_{10}}{16} + \frac{\sqrt{1482}C_2}{48} + \frac{\sqrt{57}C_6}{48}$
103	$A_u$	Au	3	—	$\mathbb{G}_{10}^{(h,A_u,3)}$	Gh(10, Au, 3, )	$\frac{11\sqrt{420189}C_0}{8988} + \frac{\sqrt{827645}C_4}{1498} - \frac{\sqrt{146055}C_8}{8988}$
104	$A_u$	Au	4	—	$\mathbb{G}_{10}^{(h,A_u,4)}$	Gh(10, Au, 4, )	$\frac{\sqrt{370006}C_{10}}{749} + \frac{\sqrt{190995}C_2}{749}$
105	$A_u$	Au	5	—	$\mathbb{G}_{10}^{(h,A_u,5)}$	Gh(10, Au, 5, )	$\frac{3\sqrt{3213210}C_0}{11984} - \frac{83\sqrt{1498}C_4}{5992} + \frac{31\sqrt{76398}C_8}{11984}$
106	$A_u$	Au	6	—	$\mathbb{G}_{10}^{(h,A_u,6)}$	Gh(10, Au, 6, )	$\frac{\sqrt{1209635}C_{10}}{11984} - \frac{19\sqrt{58422}C_2}{35952} + \frac{\sqrt{2247}C_6}{48}$
107	$A_u$	Au	7	—	$\mathbb{G}_{10}^{(h,A_u,7)}$	Gh(10, Au, 7, )	$\frac{\sqrt{221}S_1}{32} - \frac{\sqrt{102}S_3}{32} - \frac{\sqrt{510}S_5}{32} - \frac{11\sqrt{6}S_7}{64} - \frac{\sqrt{38}S_9}{64}$
108	$A_u$	Au	8	—	$\mathbb{G}_{10}^{(h,A_u,8)}$	Gh(10, Au, 8, )	$-\frac{\sqrt{221}C_1}{32} - \frac{\sqrt{102}C_3}{32} + \frac{\sqrt{510}C_5}{32} - \frac{11\sqrt{6}C_7}{64} + \frac{\sqrt{38}C_9}{64}$
109	$A_u$	Au	9	—	$\mathbb{G}_{10}^{(h,A_u,9)}$	Gh(10, Au, 9, )	$S_8$
110	$A_u$	Au	10	—	$\mathbb{G}_{10}^{(h,A_u,10)}$	Gh(10, Au, 10, )	$\frac{\sqrt{39}S_1}{32} - \frac{11\sqrt{2}S_3}{32} + \frac{5\sqrt{10}S_5}{32} - \frac{\sqrt{34}S_7}{64} - \frac{\sqrt{1938}S_9}{64}$
111	$A_u$	Au	11	—	$\mathbb{G}_{10}^{(h,A_u,11)}$	Gh(10, Au, 11, )	$-\frac{\sqrt{39}C_1}{32} - \frac{11\sqrt{2}C_3}{32} - \frac{5\sqrt{10}C_5}{32} - \frac{\sqrt{34}C_7}{64} + \frac{\sqrt{1938}C_9}{64}$
112	$A_u$	Au	12	—	$\mathbb{G}_{10}^{(h,A_u,12)}$	Gh(10, Au, 12, )	$S_4$
113	$A_u$	Au	13	—	$\mathbb{G}_{10}^{(h,A_u,13)}$	Gh(10, Au, 13, )	$\frac{\sqrt{41990}S_1}{256} + \frac{\sqrt{4845}S_3}{128} + \frac{\sqrt{969}S_5}{128} + \frac{\sqrt{285}S_7}{256} + \frac{\sqrt{5}S_9}{256}$
114	$A_u$	Au	14	—	$\mathbb{G}_{10}^{(h,A_u,14)}$	Gh(10, Au, 14, )	$\frac{\sqrt{41990}C_1}{256} - \frac{\sqrt{4845}C_3}{128} + \frac{\sqrt{969}C_5}{128} - \frac{\sqrt{285}C_7}{256} + \frac{\sqrt{5}C_9}{256}$
115	$A_u$	Au	15	—	$\mathbb{G}_{10}^{(h,A_u,15)}$	Gh(10, Au, 15, )	$S_{10}$
116	$A_u$	Au	16	—	$\mathbb{G}_{10}^{(h,A_u,16)}$	Gh(10, Au, 16, )	$\frac{9\sqrt{78}S_1}{256} - \frac{69S_3}{128} - \frac{\sqrt{5}S_5}{128} + \frac{43\sqrt{17}S_7}{256} + \frac{3\sqrt{969}S_9}{256}$
117	$A_u$	Au	17	—	$\mathbb{G}_{10}^{(h,A_u,17)}$	Gh(10, Au, 17, )	$\frac{9\sqrt{78}C_1}{256} + \frac{69C_3}{128} - \frac{\sqrt{5}C_5}{128} - \frac{43\sqrt{17}C_7}{256} + \frac{3\sqrt{969}C_9}{256}$
118	$A_u$	Au	18	—	$\mathbb{G}_{10}^{(h,A_u,18)}$	Gh(10, Au, 18, )	$S_6$
119	$A_u$	Au	19	—	$\mathbb{G}_{10}^{(h,A_u,19)}$	Gh(10, Au, 19, )	$\frac{7\sqrt{3}S_1}{128} - \frac{7\sqrt{26}S_3}{128} + \frac{5\sqrt{130}S_5}{128} - \frac{7\sqrt{442}S_7}{256} + \frac{\sqrt{25194}S_9}{256}$
120	$A_u$	Au	20	—	$\mathbb{G}_{10}^{(h,A_u,20)}$	Gh(10, Au, 20, )	$\frac{7\sqrt{3}C_1}{128} + \frac{7\sqrt{26}C_3}{128} + \frac{5\sqrt{130}C_5}{128} + \frac{7\sqrt{442}C_7}{256} + \frac{\sqrt{25194}C_9}{256}$
121	$A_u$	Au	21	—	$\mathbb{G}_{10}^{(h,A_u,21)}$	Gh(10, Au, 21, )	$S_2$

表 12 rank 11

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
122	$A_g$	Ag	1	—	$\mathbb{G}_{11}^{(h,A_g,1)}$	Gh(11, Ag, 1, )	$\frac{\sqrt{798}S_{10}}{48} + \frac{\sqrt{255}S_2}{24} + \frac{3\sqrt{6}S_6}{16}$
123	$A_g$	Ag	2	—	$\mathbb{G}_{11}^{(h,A_g,2)}$	Gh(11, Ag, 2, )	$S_8$
124	$A_g$	Ag	3	—	$\mathbb{G}_{11}^{(h,A_g,3)}$	Gh(11, Ag, 3, )	$-\frac{\sqrt{210}S_{10}}{96} + \frac{\sqrt{969}S_2}{48} - \frac{\sqrt{570}S_6}{32}$
125	$A_g$	Ag	4	—	$\mathbb{G}_{11}^{(h,A_g,4)}$	Gh(11, Ag, 4, )	$S_4$
126	$A_g$	Ag	5	—	$\mathbb{G}_{11}^{(h,A_g,5)}$	Gh(11, Ag, 5, )	$-\frac{\sqrt{646}S_{10}}{32} + \frac{\sqrt{35}S_2}{16} + \frac{\sqrt{238}S_6}{32}$
127	$A_g$	Ag	6	—	$\mathbb{G}_{11}^{(h,A_g,6)}$	Gh(11, Ag, 6, )	$-\frac{21\sqrt{66}C_1}{512} + \frac{\sqrt{88179}C_{11}}{512} + \frac{\sqrt{30030}C_3}{512} - \frac{15\sqrt{143}C_5}{512} + \frac{\sqrt{36465}C_7}{512} - \frac{\sqrt{46189}C_9}{512}$
128	$A_g$	Ag	7	—	$\mathbb{G}_{11}^{(h,A_g,7)}$	Gh(11, Ag, 7, )	$-\frac{21\sqrt{66}S_1}{512} - \frac{\sqrt{88179}S_{11}}{512} - \frac{\sqrt{30030}S_3}{512} - \frac{15\sqrt{143}S_5}{512} - \frac{\sqrt{36465}S_7}{512} - \frac{\sqrt{46189}S_9}{512}$
129	$A_g$	Ag	8	—	$\mathbb{G}_{11}^{(h,A_g,8)}$	Gh(11, Ag, 8, )	$C_0$
130	$A_g$	Ag	9	—	$\mathbb{G}_{11}^{(h,A_g,9)}$	Gh(11, Ag, 9, )	$-\frac{\sqrt{41990}C_1}{512} + \frac{\sqrt{385}C_{11}}{512} - \frac{3\sqrt{4522}C_3}{512} + \frac{3\sqrt{4845}C_5}{512} + \frac{77\sqrt{19}C_7}{512} + \frac{39\sqrt{15}C_9}{512}$
131	$A_g$	Ag	10	—	$\mathbb{G}_{11}^{(h,A_g,10)}$	Gh(11, Ag, 10, )	$-\frac{\sqrt{41990}S_1}{512} - \frac{\sqrt{385}S_{11}}{512} + \frac{3\sqrt{4522}S_3}{512} + \frac{3\sqrt{4845}S_5}{512} - \frac{77\sqrt{19}S_7}{512} + \frac{39\sqrt{15}S_9}{512}$
132	$A_g$	Ag	11	—	$\mathbb{G}_{11}^{(h,A_g,11)}$	Gh(11, Ag, 11, )	$C_8$
133	$A_g$	Ag	12	—	$\mathbb{G}_{11}^{(h,A_g,12)}$	Gh(11, Ag, 12, )	$-\frac{5\sqrt{546}C_1}{256} + \frac{\sqrt{10659}C_{11}}{256} + \frac{11\sqrt{30}C_3}{256} + \frac{13\sqrt{7}C_5}{256} - \frac{3\sqrt{1785}C_7}{256} + \frac{3\sqrt{2261}C_9}{256}$
134	$A_g$	Ag	13	—	$\mathbb{G}_{11}^{(h,A_g,13)}$	Gh(11, Ag, 13, )	$-\frac{5\sqrt{546}S_1}{256} - \frac{\sqrt{10659}S_{11}}{256} - \frac{11\sqrt{30}S_3}{256} + \frac{13\sqrt{7}S_5}{256} + \frac{3\sqrt{1785}S_7}{256} + \frac{3\sqrt{2261}S_9}{256}$
135	$A_g$	Ag	14	—	$\mathbb{G}_{11}^{(h,A_g,14)}$	Gh(11, Ag, 14, )	$C_4$
136	$A_g$	Ag	15	—	$\mathbb{G}_{11}^{(h,A_g,15)}$	Gh(11, Ag, 15, )	$-\frac{\sqrt{29393}C_1}{512} - \frac{\sqrt{22}C_{11}}{1024} - \frac{9\sqrt{1615}C_3}{512} - \frac{5\sqrt{13566}C_5}{1024} - \frac{7\sqrt{1330}C_7}{1024} - \frac{9\sqrt{42}C_9}{1024}$
137	$A_g$	Ag	16	—	$\mathbb{G}_{11}^{(h,A_g,16)}$	Gh(11, Ag, 16, )	$\frac{\sqrt{29393}S_1}{512} - \frac{\sqrt{22}S_{11}}{1024} - \frac{9\sqrt{1615}S_3}{512} + \frac{5\sqrt{13566}S_5}{1024} - \frac{7\sqrt{1330}S_7}{1024} + \frac{9\sqrt{42}S_9}{1024}$
138	$A_g$	Ag	17	—	$\mathbb{G}_{11}^{(h,A_g,17)}$	Gh(11, Ag, 17, )	$C_{10}$
139	$A_g$	Ag	18	—	$\mathbb{G}_{11}^{(h,A_g,18)}$	Gh(11, Ag, 18, )	$-\frac{15\sqrt{221}C_1}{512} - \frac{3\sqrt{2926}C_{11}}{1024} - \frac{\sqrt{595}C_3}{512} + \frac{53\sqrt{102}C_5}{1024} - \frac{105\sqrt{10}C_7}{1024} - \frac{61\sqrt{114}C_9}{1024}$
140	$A_g$	Ag	19	—	$\mathbb{G}_{11}^{(h,A_g,19)}$	Gh(11, Ag, 19, )	$\frac{15\sqrt{221}S_1}{512} - \frac{3\sqrt{2926}S_{11}}{1024} - \frac{\sqrt{595}S_3}{512} - \frac{53\sqrt{102}S_5}{1024} - \frac{105\sqrt{10}S_7}{1024} + \frac{61\sqrt{114}S_9}{1024}$
141	$A_g$	Ag	20	—	$\mathbb{G}_{11}^{(h,A_g,20)}$	Gh(11, Ag, 20, )	$C_6$
142	$A_g$	Ag	21	—	$\mathbb{G}_{11}^{(h,A_g,21)}$	Gh(11, Ag, 21, )	$-\frac{21\sqrt{130}C_1}{512} - \frac{\sqrt{124355}C_{11}}{512} + \frac{57\sqrt{14}C_3}{512} - \frac{41\sqrt{15}C_5}{512} + \frac{17\sqrt{17}C_7}{512} + \frac{\sqrt{4845}C_9}{512}$
143	$A_g$	Ag	22	—	$\mathbb{G}_{11}^{(h,A_g,22)}$	Gh(11, Ag, 22, )	$\frac{21\sqrt{130}S_1}{512} - \frac{\sqrt{124355}S_{11}}{512} + \frac{57\sqrt{14}S_3}{512} + \frac{41\sqrt{15}S_5}{512} + \frac{17\sqrt{17}S_7}{512} - \frac{\sqrt{4845}S_9}{512}$
144	$A_g$	Ag	23	—	$\mathbb{G}_{11}^{(h,A_g,23)}$	Gh(11, Ag, 23, )	$C_2$