# Atomic Multipoles (spinless LM basis)

bra: $[(0,0)]$
ket: $[(0,0)]$

| no. | type | basis |
|---|---|---|
| 1 | $\mathbb{Q}_{0}^{(a)}$ | $\begin{pmatrix} 1 \end{pmatrix}$ |

bra: $[(0,0)]$
ket: $[(1,1),(1,0),(1,-1)]$

| no. | type | basis |
|---|---|---|
| 2 | $\mathbb{Q}_{1,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{3}}{3} \end{pmatrix}$ |
| 3 | $\mathbb{Q}_{1,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{\sqrt{3}}{3} & 0 \end{pmatrix}$ |
| 4 | $\mathbb{Q}_{1,-1}^{(a)}$ | $\begin{pmatrix} -\frac{\sqrt{3}}{3} & 0 & 0 \end{pmatrix}$ |
| 5 | $\mathbb{T}_{1,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{3}i}{9} \end{pmatrix}$ |
| 6 | $\mathbb{T}_{1,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{\sqrt{3}i}{9} & 0 \end{pmatrix}$ |
| 7 | $\mathbb{T}_{1,-1}^{(a)}$ | $\begin{pmatrix} -\frac{\sqrt{3}i}{9} & 0 & 0 \end{pmatrix}$ |

bra: $[(0,0)]$
ket: $[(2,2),(2,1),(2,0),(2,-1),(2,-2)]$

| no. | type | basis |
|---|---|---|
| 8 | $\mathbb{Q}_{2,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{5}}{5} \end{pmatrix}$ |
| 9 | $\mathbb{Q}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{5}}{5} & 0 \end{pmatrix}$ |

*continued ...*

表 3

| no. | type | basis |
|---|---|---|
| 10 | $\mathbb{Q}^{(a)}_{2,0}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{5}}{5} & 0 & 0 \end{pmatrix}$ |
| 11 | $\mathbb{Q}^{(a)}_{2,-1}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{5}}{5} & 0 & 0 & 0 \end{pmatrix}$ |
| 12 | $\mathbb{Q}^{(a)}_{2,-2}$ | $\begin{pmatrix} \frac{\sqrt{5}}{5} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 13 | $\mathbb{T}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{5}i}{10} \end{pmatrix}$ |
| 14 | $\mathbb{T}^{(a)}_{2,1}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{5}i}{10} & 0 \end{pmatrix}$ |
| 15 | $\mathbb{T}^{(a)}_{2,0}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{5}i}{10} & 0 & 0 \end{pmatrix}$ |
| 16 | $\mathbb{T}^{(a)}_{2,-1}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{5}i}{10} & 0 & 0 & 0 \end{pmatrix}$ |
| 17 | $\mathbb{T}^{(a)}_{2,-2}$ | $\begin{pmatrix} \frac{\sqrt{5}i}{10} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(0,0)]$

ket: $[(3,3),(3,2),(3,1),(3,0),(3,-1),(3,-2),(3,-3)]$

| no. | type | basis |
|---|---|---|
| 18 | $\mathbb{Q}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{7}}{7} \end{pmatrix}$ |
| 19 | $\mathbb{Q}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}}{7} & 0 \end{pmatrix}$ |
| 20 | $\mathbb{Q}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{\sqrt{7}}{7} & 0 & 0 \end{pmatrix}$ |
| 21 | $\mathbb{Q}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{\sqrt{7}}{7} & 0 & 0 & 0 \end{pmatrix}$ |
| 22 | $\mathbb{Q}^{(a)}_{3,-1}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{7}}{7} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 23 | $\mathbb{Q}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & \frac{\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 24 | $\mathbb{Q}^{(a)}_{3,-3}$ | $\begin{pmatrix} -\frac{\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 25 | $\mathbb{T}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}i}{35} \end{pmatrix}$ |

*continued ...*

表 4

| no. | type | basis |
|---|---|---|
| 26 | $\mathbb{T}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{3\sqrt{7}i}{35} & 0 \end{pmatrix}$ |
| 27 | $\mathbb{T}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}i}{35} & 0 & 0 \end{pmatrix}$ |
| 28 | $\mathbb{T}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{3\sqrt{7}i}{35} & 0 & 0 & 0 \end{pmatrix}$ |
| 29 | $\mathbb{T}^{(a)}_{3,-1}$ | $\begin{pmatrix} 0 & 0 & -\frac{3\sqrt{7}i}{35} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 30 | $\mathbb{T}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & \frac{3\sqrt{7}i}{35} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 31 | $\mathbb{T}^{(a)}_{3,-3}$ | $\begin{pmatrix} -\frac{3\sqrt{7}i}{35} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(1,1),(1,0),(1,-1)]$
ket: $[(1,1),(1,0),(1,-1)]$

| no. | type | basis |
|---|---|---|
| 32 | $\mathbb{Q}^{(a)}_{0}$ | $\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ |
| 33 | $\mathbb{Q}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{6}}{5} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}$ |
| 34 | $\mathbb{Q}^{(a)}_{2,1}$ | $\begin{pmatrix} 0 & \frac{\sqrt{3}}{5} & 0 \\ 0 & 0 & -\frac{\sqrt{3}}{5} \\ 0 & 0 & 0 \end{pmatrix}$ |
| 35 | $\mathbb{Q}^{(a)}_{2,0}$ | $\begin{pmatrix} -\frac{1}{5} & 0 & 0 \\ 0 & \frac{2}{5} & 0 \\ 0 & 0 & -\frac{1}{5} \end{pmatrix}$ |

*continued ...*

表 5

| no. | type | basis |
|---|---|---|
| 36 | $\mathbb{Q}^{(a)}_{2,-1}$ | $\begin{pmatrix} 0 & 0 & 0 \\ -\frac{\sqrt{3}}{5} & 0 & 0 \\ 0 & \frac{\sqrt{3}}{5} & 0 \end{pmatrix}$ |
| 37 | $\mathbb{Q}^{(a)}_{2,-2}$ | $\begin{pmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ -\frac{\sqrt{6}}{5} & 0 & 0 \end{pmatrix}$ |
| 38 | $\mathbb{M}^{(a)}_{1,1}$ | $\begin{pmatrix} 0 & -1 & 0 \\ 0 & 0 & -1 \\ 0 & 0 & 0 \end{pmatrix}$ |
| 39 | $\mathbb{M}^{(a)}_{1,0}$ | $\begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & -1 \end{pmatrix}$ |
| 40 | $\mathbb{M}^{(a)}_{1,-1}$ | $\begin{pmatrix} 0 & 0 & 0 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{pmatrix}$ |

bra: $[(1,1),(1,0),(1,-1)]$
ket: $[(2,2),(2,1),(2,0),(2,-1),(2,-2)]$

| no. | type | basis |
|---|---|---|
| 41 | $\mathbb{Q}^{(a)}_{1,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{15}}{15} & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{5}}{5} & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{10}}{5} \end{pmatrix}$ |

*continued ...*

表 6

| no. | type | basis |
|---|---|---|
| 42 | $\mathbb{Q}^{(a)}_{1,0}$ | $\begin{pmatrix} 0 & \frac{\sqrt{5}}{5} & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{15}}{15} & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{5}}{5} & 0 \end{pmatrix}$ |
| 43 | $\mathbb{Q}^{(a)}_{1,-1}$ | $\begin{pmatrix} -\frac{\sqrt{10}}{5} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{5}}{5} & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{15}}{15} & 0 & 0 \end{pmatrix}$ |
| 44 | $\mathbb{Q}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{3}{7} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 45 | $\mathbb{Q}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{6}}{7} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{3}}{7} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 46 | $\mathbb{Q}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & \frac{3\sqrt{10}}{35} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{30}}{35} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{15}}{35} \end{pmatrix}$ |
| 47 | $\mathbb{Q}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & -\frac{3\sqrt{5}}{35} & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{15}}{35} & 0 & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{5}}{35} & 0 \end{pmatrix}$ |
| 48 | $\mathbb{Q}^{(a)}_{3,-1}$ | $\begin{pmatrix} \frac{\sqrt{15}}{35} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{30}}{35} & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{10}}{35} & 0 & 0 \end{pmatrix}$ |
| 49 | $\mathbb{Q}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{3}}{7} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{6}}{7} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 6

| no. | type | basis |
|---|---|---|
| 50 | $\mathbb{Q}_{3,-3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ \frac{3}{7} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 51 | $\mathbb{M}_{2,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{2\sqrt{30}}{15} & 0 \\ 0 & 0 & 0 & 0 & \frac{4\sqrt{15}}{15} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 52 | $\mathbb{M}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{2\sqrt{5}}{5} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{15}}{15} & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{30}}{15} \end{pmatrix}$ |
| 53 | $\mathbb{M}_{2,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{2\sqrt{5}}{5} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{5}}{5} & 0 \end{pmatrix}$ |
| 54 | $\mathbb{M}_{2,-1}^{(a)}$ | $\begin{pmatrix} -\frac{2\sqrt{30}}{15} & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{15}}{15} & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{5}}{5} & 0 & 0 \end{pmatrix}$ |
| 55 | $\mathbb{M}_{2,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ -\frac{4\sqrt{15}}{15} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{30}}{15} & 0 & 0 & 0 \end{pmatrix}$ |
| 56 | $\mathbb{T}_{1,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{2\sqrt{15}i}{45} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{5}i}{15} & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{10}i}{15} \end{pmatrix}$ |
| 57 | $\mathbb{T}_{1,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{2\sqrt{5}i}{15} & 0 & 0 & 0 \\ 0 & 0 & \frac{4\sqrt{15}i}{45} & 0 & 0 \\ 0 & 0 & 0 & \frac{2\sqrt{5}i}{15} & 0 \end{pmatrix}$ |

*continued ...*

表 6

| no. | type | basis |
|---|---|---|
| 58 | $\mathbb{T}^{(a)}_{1,-1}$ | $\begin{pmatrix} -\frac{2\sqrt{10}i}{15} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{5}i}{15} & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{15}i}{45} & 0 & 0 \end{pmatrix}$ |
| 59 | $\mathbb{T}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{3i}{35} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 60 | $\mathbb{T}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{6}i}{35} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{3}i}{35} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 61 | $\mathbb{T}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & \frac{3\sqrt{10}i}{175} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{30}i}{175} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{15}i}{175} \end{pmatrix}$ |
| 62 | $\mathbb{T}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & -\frac{3\sqrt{5}i}{175} & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{15}i}{175} & 0 & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{5}i}{175} & 0 \end{pmatrix}$ |
| 63 | $\mathbb{T}^{(a)}_{3,-1}$ | $\begin{pmatrix} \frac{\sqrt{15}i}{175} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{30}i}{175} & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{10}i}{175} & 0 & 0 \end{pmatrix}$ |
| 64 | $\mathbb{T}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{3}i}{35} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{6}i}{35} & 0 & 0 & 0 \end{pmatrix}$ |
| 65 | $\mathbb{T}^{(a)}_{3,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ \frac{3i}{35} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 6

| no. | type | basis |
|---|---|---|
| 66 | $\mathbb{G}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{2\sqrt{30}i}{45} & 0 \\ 0 & 0 & 0 & 0 & \frac{4\sqrt{15}i}{45} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 67 | $\mathbb{G}^{(a)}_{2,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{2\sqrt{5}i}{15} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{15}i}{45} & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{30}i}{45} \end{pmatrix}$ |
| 68 | $\mathbb{G}^{(a)}_{2,0}$ | $\begin{pmatrix} 0 & \frac{2\sqrt{5}i}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{5}i}{15} & 0 \end{pmatrix}$ |
| 69 | $\mathbb{G}^{(a)}_{2,-1}$ | $\begin{pmatrix} -\frac{2\sqrt{30}i}{45} & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{15}i}{45} & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{5}i}{15} & 0 & 0 \end{pmatrix}$ |
| 70 | $\mathbb{G}^{(a)}_{2,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ -\frac{4\sqrt{15}i}{45} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{30}i}{45} & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(1,1),(1,0),(1,-1)]$
ket: $[(3,3),(3,2),(3,1),(3,0),(3,-1),(3,-2),(3,-3)]$

| no. | type | basis |
|---|---|---|
| 71 | $\mathbb{Q}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{21}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{105}}{35} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{3\sqrt{35}}{35} \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 72 | $\mathbb{Q}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{3\sqrt{7}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{42}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{210}}{35} & 0 \end{pmatrix}$ |
| 73 | $\mathbb{Q}_{2,0}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{3\sqrt{14}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{21}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{3\sqrt{14}}{35} & 0 & 0 \end{pmatrix}$ |
| 74 | $\mathbb{Q}_{2,-1}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{210}}{35} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{42}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{7}}{35} & 0 & 0 & 0 \end{pmatrix}$ |
| 75 | $\mathbb{Q}_{2,-2}^{(a)}$ | $\begin{pmatrix} \frac{3\sqrt{35}}{35} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{105}}{35} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{21}}{35} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 76 | $\mathbb{Q}_{4,4}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{3}}{9} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 77 | $\mathbb{Q}_{4,3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{1}{3} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{3}}{9} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 78 | $\mathbb{Q}_{4,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{\sqrt{35}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{7}}{21} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}}{63} \end{pmatrix}$ |
| 79 | $\mathbb{Q}_{4,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{\sqrt{210}}{63} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{35}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}}{21} & 0 \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 80 | $\mathbb{Q}^{(a)}_{4,0}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{14}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{21}}{63} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{14}}{21} & 0 & 0 \end{pmatrix}$ |
| 81 | $\mathbb{Q}^{(a)}_{4,-1}$ | $\begin{pmatrix} 0 & \frac{\sqrt{7}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{210}}{63} & 0 & 0 & 0 \end{pmatrix}$ |
| 82 | $\mathbb{Q}^{(a)}_{4,-2}$ | $\begin{pmatrix} -\frac{\sqrt{21}}{63} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{7}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 83 | $\mathbb{Q}^{(a)}_{4,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{3}}{9} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{1}{3} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 84 | $\mathbb{Q}^{(a)}_{4,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{3}}{9} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 85 | $\mathbb{M}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}}{14} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{21}}{14} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 86 | $\mathbb{M}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{105}}{14} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{21}}{7} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}}{14} \end{pmatrix}$ |
| 87 | $\mathbb{M}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{3\sqrt{14}}{14} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{21}}{14} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{105}}{14} & 0 \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 88 | $\mathbb{M}_{3,0}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{3\sqrt{14}}{14} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{3\sqrt{14}}{14} & 0 & 0 \end{pmatrix}$ |
| 89 | $\mathbb{M}_{3,-1}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{105}}{14} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{21}}{14} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{14}}{14} & 0 & 0 & 0 \end{pmatrix}$ |
| 90 | $\mathbb{M}_{3,-2}^{(a)}$ | $\begin{pmatrix} \frac{3\sqrt{7}}{14} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{21}}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{105}}{14} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 91 | $\mathbb{M}_{3,-3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{3\sqrt{21}}{14} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{3\sqrt{7}}{14} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 92 | $\mathbb{T}_{2,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{21}i}{42} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{105}i}{42} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}i}{14} \end{pmatrix}$ |
| 93 | $\mathbb{T}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{7}i}{14} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{42}i}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{210}i}{42} & 0 \end{pmatrix}$ |
| 94 | $\mathbb{T}_{2,0}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{14}i}{14} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{21}i}{14} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{14}i}{14} & 0 & 0 \end{pmatrix}$ |
| 95 | $\mathbb{T}_{2,-1}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{210}i}{42} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{42}i}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{7}i}{14} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 96 | $\mathbb{T}^{(a)}_{2,-2}$ | $\begin{pmatrix} \frac{\sqrt{35}i}{14} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{105}i}{42} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{21}i}{42} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 97 | $\mathbb{T}^{(a)}_{4,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{3}i}{27} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 98 | $\mathbb{T}^{(a)}_{4,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{i}{9} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{3}i}{27} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 99 | $\mathbb{T}^{(a)}_{4,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{\sqrt{35}i}{63} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{7}i}{63} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}i}{189} \end{pmatrix}$ |
| 100 | $\mathbb{T}^{(a)}_{4,1}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{\sqrt{210}i}{189} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{35}i}{63} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}i}{63} & 0 \end{pmatrix}$ |
| 101 | $\mathbb{T}^{(a)}_{4,0}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{14}i}{63} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{21}i}{189} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{14}i}{63} & 0 & 0 \end{pmatrix}$ |
| 102 | $\mathbb{T}^{(a)}_{4,-1}$ | $\begin{pmatrix} 0 & \frac{\sqrt{7}i}{63} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{35}i}{63} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{210}i}{189} & 0 & 0 & 0 \end{pmatrix}$ |
| 103 | $\mathbb{T}^{(a)}_{4,-2}$ | $\begin{pmatrix} -\frac{\sqrt{21}i}{189} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{7}i}{63} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{35}i}{63} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 104 | $\mathbb{T}^{(a)}_{4,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{3}i}{27} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{i}{9} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 105 | $\mathbb{T}^{(a)}_{4,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{3}i}{27} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 106 | $\mathbb{G}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}i}{28} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{21}i}{28} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 107 | $\mathbb{G}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{105}i}{28} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{21}i}{14} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{3\sqrt{7}i}{28} \end{pmatrix}$ |
| 108 | $\mathbb{G}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{3\sqrt{14}i}{28} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{21}i}{28} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{105}i}{28} & 0 \end{pmatrix}$ |
| 109 | $\mathbb{G}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & 0 & \frac{3\sqrt{14}i}{28} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{3\sqrt{14}i}{28} & 0 & 0 \end{pmatrix}$ |
| 110 | $\mathbb{G}^{(a)}_{3,-1}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{105}i}{28} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{21}i}{28} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{14}i}{28} & 0 & 0 & 0 \end{pmatrix}$ |
| 111 | $\mathbb{G}^{(a)}_{3,-2}$ | $\begin{pmatrix} \frac{3\sqrt{7}i}{28} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{21}i}{14} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{105}i}{28} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 7

| no. | type | basis |
|---|---|---|
| 112 | $\mathbb{G}^{(a)}_{3,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{3\sqrt{21}i}{28} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{3\sqrt{7}i}{28} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(2,2),(2,1),(2,0),(2,-1),(2,-2)]$
ket: $[(2,2),(2,1),(2,0),(2,-1),(2,-2)]$

| no. | type | basis |
|---|---|---|
| 113 | $\mathbb{Q}^{(a)}_{0}$ | $\begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{pmatrix}$ |
| 114 | $\mathbb{Q}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & -\frac{2}{7} & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{6}}{7} & 0 \\ 0 & 0 & 0 & 0 & -\frac{2}{7} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 115 | $\mathbb{Q}^{(a)}_{2,1}$ | $\begin{pmatrix} 0 & \frac{\sqrt{6}}{7} & 0 & 0 & 0 \\ 0 & 0 & \frac{1}{7} & 0 & 0 \\ 0 & 0 & 0 & -\frac{1}{7} & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{6}}{7} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 8

| no. | type | basis |
|---|---|---|
| 116 | $\mathbb{Q}^{(a)}_{2,0}$ | $\begin{pmatrix} -\frac{2}{7} & 0 & 0 & 0 & 0 \\ 0 & \frac{1}{7} & 0 & 0 & 0 \\ 0 & 0 & \frac{2}{7} & 0 & 0 \\ 0 & 0 & 0 & \frac{1}{7} & 0 \\ 0 & 0 & 0 & 0 & -\frac{2}{7} \end{pmatrix}$ |
| 117 | $\mathbb{Q}^{(a)}_{2,-1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{6}}{7} & 0 & 0 & 0 & 0 \\ 0 & -\frac{1}{7} & 0 & 0 & 0 \\ 0 & 0 & \frac{1}{7} & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{6}}{7} & 0 \end{pmatrix}$ |
| 118 | $\mathbb{Q}^{(a)}_{2,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ -\frac{2}{7} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{6}}{7} & 0 & 0 & 0 \\ 0 & 0 & -\frac{2}{7} & 0 & 0 \end{pmatrix}$ |
| 119 | $\mathbb{Q}^{(a)}_{4,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{70}}{21} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 8

| no. | type | basis |
|---|---|---|
| 120 | $\mathbb{Q}^{(a)}_{4,3}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{35}}{21} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{35}}{21} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 121 | $\mathbb{Q}^{(a)}_{4,2}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{15}}{21} & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{10}}{21} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{15}}{21} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 122 | $\mathbb{Q}^{(a)}_{4,1}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{5}}{21} & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{30}}{21} & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{30}}{21} & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{5}}{21} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 123 | $\mathbb{Q}^{(a)}_{4,0}$ | $\begin{pmatrix} \frac{1}{21} & 0 & 0 & 0 & 0 \\ 0 & -\frac{4}{21} & 0 & 0 & 0 \\ 0 & 0 & \frac{2}{7} & 0 & 0 \\ 0 & 0 & 0 & -\frac{4}{21} & 0 \\ 0 & 0 & 0 & 0 & \frac{1}{21} \end{pmatrix}$ |

*continued …*

表 8

| no. | type | basis |
|---|---|---|
| 124 | $\mathbb{Q}^{(a)}_{4,-1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{5}}{21} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{30}}{21} & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{30}}{21} & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{5}}{21} & 0 \end{pmatrix}$ |
| 125 | $\mathbb{Q}^{(a)}_{4,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{15}}{21} & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{10}}{21} & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{15}}{21} & 0 & 0 \end{pmatrix}$ |
| 126 | $\mathbb{Q}^{(a)}_{4,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{35}}{21} & 0 & 0 & 0 \end{pmatrix}$ |
| 127 | $\mathbb{Q}^{(a)}_{4,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{70}}{21} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 8

| no. | type | basis |
|---|---|---|
| 128 | $\mathbb{M}_{1,1}^{(a)}$ | $\begin{pmatrix} 0 & -\sqrt{2} & 0 & 0 & 0 \\ 0 & 0 & -\sqrt{3} & 0 & 0 \\ 0 & 0 & 0 & -\sqrt{3} & 0 \\ 0 & 0 & 0 & 0 & -\sqrt{2} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 129 | $\mathbb{M}_{1,0}^{(a)}$ | $\begin{pmatrix} 2 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & -2 \end{pmatrix}$ |
| 130 | $\mathbb{M}_{1,-1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ \sqrt{2} & 0 & 0 & 0 & 0 \\ 0 & \sqrt{3} & 0 & 0 & 0 \\ 0 & 0 & \sqrt{3} & 0 & 0 \\ 0 & 0 & 0 & \sqrt{2} & 0 \end{pmatrix}$ |
| 131 | $\mathbb{M}_{3,3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{3\sqrt{5}}{7} & 0 \\ 0 & 0 & 0 & 0 & \frac{3\sqrt{5}}{7} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 8

| no. | type | basis |
|---|---|---|
| 132 | $\mathbb{M}_{3,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{3\sqrt{5}}{7} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{3\sqrt{5}}{7} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 133 | $\mathbb{M}_{3,1}^{(a)}$ | $\begin{pmatrix} 0 & \frac{3\sqrt{3}}{7} & 0 & 0 & 0 \\ 0 & 0 & -\frac{3\sqrt{2}}{7} & 0 & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{2}}{7} & 0 \\ 0 & 0 & 0 & 0 & \frac{3\sqrt{3}}{7} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 134 | $\mathbb{M}_{3,0}^{(a)}$ | $\begin{pmatrix} -\frac{3}{7} & 0 & 0 & 0 & 0 \\ 0 & \frac{6}{7} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{6}{7} & 0 \\ 0 & 0 & 0 & 0 & \frac{3}{7} \end{pmatrix}$ |
| 135 | $\mathbb{M}_{3,-1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ -\frac{3\sqrt{3}}{7} & 0 & 0 & 0 & 0 \\ 0 & \frac{3\sqrt{2}}{7} & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{2}}{7} & 0 & 0 \\ 0 & 0 & 0 & -\frac{3\sqrt{3}}{7} & 0 \end{pmatrix}$ |

*continued ...*

表 8

| no. | type | basis |
|---|---|---|
| 136 | $\mathbb{M}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ -\frac{3\sqrt{5}}{7} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{3\sqrt{5}}{7} & 0 & 0 \end{pmatrix}$ |
| 137 | $\mathbb{M}^{(a)}_{3,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ -\frac{3\sqrt{5}}{7} & 0 & 0 & 0 & 0 \\ 0 & -\frac{3\sqrt{5}}{7} & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(2,2),(2,1),(2,0),(2,-1),(2,-2)]$
ket: $[(3,3),(3,2),(3,1),(3,0),(3,-1),(3,-2),(3,-3)]$

| no. | type | basis |
|---|---|---|
| 138 | $\mathbb{Q}^{(a)}_{1,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{35}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{105}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{210}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{14}}{7} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}}{7} \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 139 | $\mathbb{Q}^{(a)}_{1,0}$ | $\begin{pmatrix} 0 & \frac{\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{35}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{70}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}}{7} & 0 \end{pmatrix}$ |
| 140 | $\mathbb{Q}^{(a)}_{1,-1}$ | $\begin{pmatrix} -\frac{\sqrt{21}}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{14}}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{210}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{105}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{35}}{35} & 0 & 0 \end{pmatrix}$ |
| 141 | $\mathbb{Q}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{14}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}}{21} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}}{21} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 142 | $\mathbb{Q}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{2\sqrt{7}}{21} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{21}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}}{21} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 143 | $\mathbb{Q}_{3,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{2\sqrt{210}}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{70}}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{35}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}}{21} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{14}}{21} \end{pmatrix}$ |
| 144 | $\mathbb{Q}_{3,0}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{2\sqrt{7}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{70}}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{35}}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{70}}{105} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{7}}{21} & 0 \end{pmatrix}$ |
| 145 | $\mathbb{Q}_{3,-1}^{(a)}$ | $\begin{pmatrix} \frac{\sqrt{14}}{21} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{21}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{35}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{70}}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{210}}{105} & 0 & 0 \end{pmatrix}$ |
| 146 | $\mathbb{Q}_{3,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{21}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{7}}{21} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 147 | $\mathbb{Q}^{(a)}_{3,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{35}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{14}}{21} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 148 | $\mathbb{Q}^{(a)}_{5,5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{6}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 149 | $\mathbb{Q}^{(a)}_{5,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{10}}{11} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{15}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 150 | $\mathbb{Q}^{(a)}_{5,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{5\sqrt{2}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{5}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{5}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 151 | $\mathbb{Q}^{(a)}_{5,2}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{5}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{3}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{5}}{11} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{5}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 152 | $\mathbb{Q}^{(a)}_{5,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{5\sqrt{21}}{231} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{7}}{231} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{14}}{77} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{210}}{231} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{35}}{231} \end{pmatrix}$ |
| 153 | $\mathbb{Q}^{(a)}_{5,0}$ | $\begin{pmatrix} 0 & \frac{5\sqrt{7}}{231} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{70}}{231} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{10\sqrt{35}}{231} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{70}}{231} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{7}}{231} & 0 \end{pmatrix}$ |
| 154 | $\mathbb{Q}^{(a)}_{5,-1}$ | $\begin{pmatrix} -\frac{\sqrt{35}}{231} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{210}}{231} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{14}}{77} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{7}}{231} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{21}}{231} & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 155 | $\mathbb{Q}^{(a)}_{5,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{5}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{5}}{11} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{3}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{5}{33} & 0 & 0 & 0 \end{pmatrix}$ |
| 156 | $\mathbb{Q}^{(a)}_{5,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{5}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{4\sqrt{5}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{2}}{33} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 157 | $\mathbb{Q}^{(a)}_{5,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{15}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{10}}{11} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 158 | $\mathbb{Q}^{(a)}_{5,-5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{5\sqrt{6}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 159 | $\mathbb{M}_{2,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{4\sqrt{35}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{4\sqrt{105}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{7}}{7} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{7}}{7} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 160 | $\mathbb{M}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{4\sqrt{105}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{8\sqrt{35}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{4\sqrt{70}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{7}}{7} \end{pmatrix}$ |
| 161 | $\mathbb{M}_{2,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{4\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{4\sqrt{70}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{4\sqrt{70}}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{7}}{7} & 0 \end{pmatrix}$ |
| 162 | $\mathbb{M}_{2,-1}^{(a)}$ | $\begin{pmatrix} -\frac{4\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{4\sqrt{70}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{8\sqrt{35}}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{4\sqrt{105}}{35} & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 163 | $\mathbb{M}^{(a)}_{2,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{4\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{4\sqrt{7}}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{4\sqrt{105}}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{4\sqrt{35}}{35} & 0 & 0 & 0 \end{pmatrix}$ |
| 164 | $\mathbb{M}^{(a)}_{4,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{10}}{15} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{15}}{15} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 165 | $\mathbb{M}^{(a)}_{4,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{2\sqrt{2}}{3} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{5}}{15} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{5}}{5} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 166 | $\mathbb{M}^{(a)}_{4,2}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{4\sqrt{21}}{21} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{7}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{8\sqrt{105}}{105} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{105}}{35} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 167 | $\mathbb{M}_{4,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{4\sqrt{14}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{42}}{21} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{21}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{35}}{15} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{210}}{105} \end{pmatrix}$ |
| 168 | $\mathbb{M}_{4,0}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{4\sqrt{7}}{21} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{70}}{21} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{7}}{21} & 0 \end{pmatrix}$ |
| 169 | $\mathbb{M}_{4,-1}^{(a)}$ | $\begin{pmatrix} \frac{2\sqrt{210}}{105} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{35}}{15} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{21}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{2\sqrt{42}}{21} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{4\sqrt{14}}{21} & 0 & 0 \end{pmatrix}$ |
| 170 | $\mathbb{M}_{4,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{2\sqrt{105}}{35} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{8\sqrt{105}}{105} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{7}}{21} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{21}}{21} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 171 | $\mathbb{M}^{(a)}_{4,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{2\sqrt{5}}{5} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{5}}{15} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{2}}{3} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 172 | $\mathbb{M}^{(a)}_{4,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{4\sqrt{15}}{15} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{4\sqrt{10}}{15} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 173 | $\mathbb{T}^{(a)}_{1,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{35}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{105}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{210}i}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{14}i}{7} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}i}{7} \end{pmatrix}$ |
| 174 | $\mathbb{T}^{(a)}_{1,0}$ | $\begin{pmatrix} 0 & \frac{\sqrt{7}i}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{3\sqrt{35}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{70}i}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}i}{7} & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 175 | $\mathbb{T}^{(a)}_{1,-1}$ | $\begin{pmatrix} -\frac{\sqrt{21}i}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{14}i}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{210}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{105}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{35}i}{35} & 0 & 0 \end{pmatrix}$ |
| 176 | $\mathbb{T}^{(a)}_{3,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{14}i}{70} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}i}{70} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}i}{70} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 177 | $\mathbb{T}^{(a)}_{3,2}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{7}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{21}i}{70} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{35}i}{70} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 178 | $\mathbb{T}^{(a)}_{3,1}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{210}i}{175} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{70}i}{350} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{3\sqrt{35}i}{350} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{21}i}{70} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{14}i}{70} \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 179 | $\mathbb{T}^{(a)}_{3,0}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{7}i}{35} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{70}i}{350} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{2\sqrt{35}i}{175} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{70}i}{350} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{7}i}{35} & 0 \end{pmatrix}$ |
| 180 | $\mathbb{T}^{(a)}_{3,-1}$ | $\begin{pmatrix} \frac{\sqrt{14}i}{70} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{21}i}{70} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{3\sqrt{35}i}{350} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{70}i}{350} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{210}i}{175} & 0 & 0 \end{pmatrix}$ |
| 181 | $\mathbb{T}^{(a)}_{3,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{35}i}{70} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{21}i}{70} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{7}i}{35} & 0 & 0 & 0 \end{pmatrix}$ |
| 182 | $\mathbb{T}^{(a)}_{3,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{35}i}{70} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{35}i}{70} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{14}i}{70} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 183 | $\mathbb{T}^{(a)}_{5,5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{6}i}{231} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 184 | $\mathbb{T}^{(a)}_{5,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{10}i}{77} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{15}i}{231} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 185 | $\mathbb{T}^{(a)}_{5,3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{5\sqrt{2}i}{231} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{5}i}{231} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{5}i}{231} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 186 | $\mathbb{T}^{(a)}_{5,2}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{5i}{231} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{3}i}{231} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{5}i}{77} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{5}i}{231} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 187 | $\mathbb{T}^{(a)}_{5,1}$ | $\begin{pmatrix} 0 & 0 & -\frac{5\sqrt{21}i}{1617} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{7}i}{1617} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{14}i}{539} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{210}i}{1617} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{35}i}{1617} \end{pmatrix}$ |
| 188 | $\mathbb{T}^{(a)}_{5,0}$ | $\begin{pmatrix} 0 & \frac{5\sqrt{7}i}{1617} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{70}i}{1617} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{10\sqrt{35}i}{1617} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{70}i}{1617} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{7}i}{1617} & 0 \end{pmatrix}$ |
| 189 | $\mathbb{T}^{(a)}_{5,-1}$ | $\begin{pmatrix} -\frac{\sqrt{35}i}{1617} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{2\sqrt{210}i}{1617} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{14}i}{539} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{7}i}{1617} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{21}i}{1617} & 0 & 0 \end{pmatrix}$ |
| 190 | $\mathbb{T}^{(a)}_{5,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{5}i}{231} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{5}i}{77} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{3}i}{231} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{5i}{231} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 191 | $\mathbb{T}^{(a)}_{5,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{5}i}{231} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{4\sqrt{5}i}{231} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{2}i}{231} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 192 | $\mathbb{T}^{(a)}_{5,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{15}i}{231} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{10}i}{77} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 193 | $\mathbb{T}^{(a)}_{5,-5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{5\sqrt{6}i}{231} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 194 | $\mathbb{G}^{(a)}_{2,2}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{2\sqrt{35}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{105}i}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{7}i}{7} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{7}i}{7} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 195 | $\mathbb{G}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{2\sqrt{105}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{4\sqrt{35}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{70}i}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{7}i}{7} \end{pmatrix}$ |
| 196 | $\mathbb{G}_{2,0}^{(a)}$ | $\begin{pmatrix} 0 & \frac{2\sqrt{7}i}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{70}i}{35} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{7}i}{7} & 0 \end{pmatrix}$ |
| 197 | $\mathbb{G}_{2,-1}^{(a)}$ | $\begin{pmatrix} -\frac{2\sqrt{7}i}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{35}i}{35} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{105}i}{35} & 0 & 0 \end{pmatrix}$ |
| 198 | $\mathbb{G}_{2,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{2\sqrt{7}i}{7} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{7}i}{7} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{105}i}{35} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{35}i}{35} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 199 | $\mathbb{G}_{4,4}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{10}i}{75} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{15}i}{75} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 200 | $\mathbb{G}_{4,3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{2\sqrt{2}i}{15} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{5}i}{75} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{5}i}{25} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 201 | $\mathbb{G}_{4,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{4\sqrt{21}i}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{2\sqrt{7}i}{105} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{8\sqrt{105}i}{525} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{105}i}{175} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 202 | $\mathbb{G}_{4,1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{4\sqrt{14}i}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{42}i}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{21}i}{105} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{2\sqrt{35}i}{75} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{210}i}{525} \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 203 | $\mathbb{G}_{4,0}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{4\sqrt{7}i}{105} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{70}i}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{70}i}{105} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{4\sqrt{7}i}{105} & 0 \end{pmatrix}$ |
| 204 | $\mathbb{G}_{4,-1}^{(a)}$ | $\begin{pmatrix} \frac{2\sqrt{210}i}{525} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{35}i}{75} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{2\sqrt{21}i}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{2\sqrt{42}i}{105} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{4\sqrt{14}i}{105} & 0 & 0 \end{pmatrix}$ |
| 205 | $\mathbb{G}_{4,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{2\sqrt{105}i}{175} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{8\sqrt{105}i}{525} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{7}i}{105} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4\sqrt{21}i}{105} & 0 & 0 & 0 \end{pmatrix}$ |
| 206 | $\mathbb{G}_{4,-3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{2\sqrt{5}i}{25} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{5}i}{75} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{2}i}{15} & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 9

| no. | type | basis |
|---|---|---|
| 207 | $\mathbb{G}_{4,-4}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{4\sqrt{15}i}{75} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{4\sqrt{10}i}{75} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

bra: $[(3,3),(3,2),(3,1),(3,0),(3,-1),(3,-2),(3,-3)]$
ket: $[(3,3),(3,2),(3,1),(3,0),(3,-1),(3,-2),(3,-3)]$

| no. | type | basis |
|---|---|---|
| 208 | $\mathbb{Q}_0^{(a)}$ | $\begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 209 | $\mathbb{Q}_{2,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\frac{\sqrt{10}}{15} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{5}}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{6}}{15} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{2\sqrt{5}}{15} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{10}}{15} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 210 | $\mathbb{Q}_{2,1}^{(a)}$ | $\begin{pmatrix} 0 & \frac{1}{3} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{15}}{15} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{2}}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{2}}{15} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{15}}{15} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{1}{3} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 211 | $\mathbb{Q}_{2,0}^{(a)}$ | $\begin{pmatrix} -\frac{1}{3} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{1}{5} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{4}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{1}{5} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{1}{3} \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 212 | $\mathbb{Q}^{(a)}_{2,-1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{1}{3} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{15}}{15} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{2}}{15} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{2}}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{15}}{15} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{1}{3} & 0 \end{pmatrix}$ |
| 213 | $\mathbb{Q}^{(a)}_{2,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{\sqrt{10}}{15} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{2\sqrt{5}}{15} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{6}}{15} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{2\sqrt{5}}{15} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{10}}{15} & 0 & 0 \end{pmatrix}$ |
| 214 | $\mathbb{Q}^{(a)}_{4,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{\sqrt{42}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{70}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{42}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 215 | $\mathbb{Q}^{(a)}_{4,3}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{\sqrt{7}}{11} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{14}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{14}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{7}}{11} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 216 | $\mathbb{Q}^{(a)}_{4,2}$ | $\begin{pmatrix} 0 & 0 & \frac{\sqrt{6}}{11} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{3}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{2\sqrt{10}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{3}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{11} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 217 | $\mathbb{Q}^{(a)}_{4,1}$ | $\begin{pmatrix} 0 & -\frac{\sqrt{30}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{4\sqrt{2}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{15}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{\sqrt{15}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{4\sqrt{2}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{\sqrt{30}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 218 | $\mathbb{Q}^{(a)}_{4,0}$ | $\begin{pmatrix} \frac{1}{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{7}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{1}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{2}{11} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{1}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{7}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{1}{11} \end{pmatrix}$ |
| 219 | $\mathbb{Q}^{(a)}_{4,-1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{30}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{4\sqrt{2}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{15}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{\sqrt{15}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{4\sqrt{2}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\frac{\sqrt{30}}{33} & 0 \end{pmatrix}$ |
| 220 | $\mathbb{Q}^{(a)}_{4,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{6}}{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{\sqrt{3}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{2\sqrt{10}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{3}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{\sqrt{6}}{11} & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 221 | $\mathbb{Q}^{(a)}_{4,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{7}}{11} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{14}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{\sqrt{14}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{\sqrt{7}}{11} & 0 & 0 & 0 \end{pmatrix}$ |
| 222 | $\mathbb{Q}^{(a)}_{4,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{\sqrt{42}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{\sqrt{70}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{\sqrt{42}}{33} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 223 | $\mathbb{Q}^{(a)}_{6,6}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & -\frac{10\sqrt{231}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued …*

表 10

| no. | type | basis |
|---|---|---|
| 224 | $\mathbb{Q}^{(a)}_{6,5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{462}}{429} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{462}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 225 | $\mathbb{Q}^{(a)}_{6,4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & -\frac{5\sqrt{210}}{429} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{10\sqrt{14}}{143} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{210}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 226 | $\mathbb{Q}^{(a)}_{6,3}$ | $\begin{pmatrix} 0 & 0 & 0 & \frac{10\sqrt{21}}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{42}}{143} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{42}}{143} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{10\sqrt{21}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 227 | $\mathbb{Q}^{(a)}_{6,2}$ | $\begin{pmatrix} 0 & 0 & -\frac{10\sqrt{7}}{429} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{14}}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{10\sqrt{105}}{429} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{20\sqrt{14}}{429} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{10\sqrt{7}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 228 | $\mathbb{Q}^{(a)}_{6,1}$ | $\begin{pmatrix} 0 & \frac{5\sqrt{7}}{429} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{105}}{429} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{25\sqrt{14}}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{25\sqrt{14}}{429} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{105}}{429} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{7}}{429} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 229 | $\mathbb{Q}^{(a)}_{6,0}$ | $\begin{pmatrix} -\frac{5}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{10}{143} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{25}{143} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{100}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{25}{143} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{10}{143} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5}{429} \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 230 | $\mathbb{Q}^{(a)}_{6,-1}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{5\sqrt{7}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{5\sqrt{105}}{429} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{25\sqrt{14}}{429} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{25\sqrt{14}}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{105}}{429} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{7}}{429} & 0 \end{pmatrix}$ |
| 231 | $\mathbb{Q}^{(a)}_{6,-2}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{10\sqrt{7}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{20\sqrt{14}}{429} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{10\sqrt{105}}{429} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{20\sqrt{14}}{429} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{10\sqrt{7}}{429} & 0 & 0 \end{pmatrix}$ |
| 232 | $\mathbb{Q}^{(a)}_{6,-3}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{10\sqrt{21}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{5\sqrt{42}}{143} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{42}}{143} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{10\sqrt{21}}{429} & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 233 | $\mathbb{Q}^{(a)}_{6,-4}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{5\sqrt{210}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{10\sqrt{14}}{143} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{210}}{429} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 234 | $\mathbb{Q}^{(a)}_{6,-5}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{5\sqrt{462}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{5\sqrt{462}}{429} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 235 | $\mathbb{Q}^{(a)}_{6,-6}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\frac{10\sqrt{231}}{429} & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued …*

表 10

| no. | type | basis |
|---|---|---|
| 236 | $\mathbb{M}_{1,1}^{(a)}$ | $\begin{pmatrix} 0 & -\sqrt{3} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\sqrt{5} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\sqrt{6} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\sqrt{6} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\sqrt{5} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\sqrt{3} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 237 | $\mathbb{M}_{1,0}^{(a)}$ | $\begin{pmatrix} 3 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 2 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -2 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -3 \end{pmatrix}$ |
| 238 | $\mathbb{M}_{1,-1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \sqrt{3} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \sqrt{5} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \sqrt{6} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \sqrt{6} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \sqrt{5} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \sqrt{3} & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 239 | $\mathbb{M}_{3,3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \sqrt{2} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \sqrt{2} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 240 | $\mathbb{M}_{3,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & -\sqrt{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \sqrt{2} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 241 | $\mathbb{M}_{3,1}^{(a)}$ | $\begin{pmatrix} 0 & \sqrt{2} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \sqrt{2} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 242 | $\mathbb{M}_{3,0}^{(a)}$ | $\begin{pmatrix} -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$ |
| 243 | $\mathbb{M}_{3,-1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\sqrt{2} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -\sqrt{2} & 0 \end{pmatrix}$ |
| 244 | $\mathbb{M}_{3,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -\sqrt{2} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \sqrt{2} & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 245 | $\mathbb{M}_{3,-3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\sqrt{2} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\sqrt{2} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 \end{pmatrix}$ |
| 246 | $\mathbb{M}_{5,5}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{42}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{42}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 247 | $\mathbb{M}_{5,4}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & \frac{5\sqrt{42}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{42}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 248 | $\mathbb{M}_{5,3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & -\frac{10\sqrt{7}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \frac{5\sqrt{14}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{14}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{10\sqrt{7}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 249 | $\mathbb{M}_{5,2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & \frac{5\sqrt{14}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{10\sqrt{7}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{10\sqrt{7}}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{14}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 250 | $\mathbb{M}_{5,1}^{(a)}$ | $\begin{pmatrix} 0 & -\frac{5\sqrt{5}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{5\sqrt{3}}{11} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -\frac{5\sqrt{10}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{10}}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{3}}{11} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5\sqrt{5}}{33} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 251 | $\mathbb{M}_{5,0}^{(a)}$ | $\begin{pmatrix} \frac{5}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{20}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{25}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{25}{33} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{20}{33} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -\frac{5}{33} \end{pmatrix}$ |
| 252 | $\mathbb{M}_{5,-1}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{5\sqrt{5}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{5\sqrt{3}}{11} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{5\sqrt{10}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{5\sqrt{10}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{3}}{11} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \frac{5\sqrt{5}}{33} & 0 \end{pmatrix}$ |
| 253 | $\mathbb{M}_{5,-2}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{5\sqrt{14}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{10\sqrt{7}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{10\sqrt{7}}{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & -\frac{5\sqrt{14}}{33} & 0 & 0 \end{pmatrix}$ |

*continued ...*

表 10

| no. | type | basis |
|---|---|---|
| 254 | $\mathbb{M}_{5,-3}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{10\sqrt{7}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -\frac{5\sqrt{14}}{33} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{14}}{33} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \frac{10\sqrt{7}}{33} & 0 & 0 & 0 \end{pmatrix}$ |
| 255 | $\mathbb{M}_{5,-4}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{5\sqrt{42}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -\frac{5\sqrt{42}}{33} & 0 & 0 & 0 & 0 \end{pmatrix}$ |
| 256 | $\mathbb{M}_{5,-5}^{(a)}$ | $\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ \frac{5\sqrt{42}}{33} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \frac{5\sqrt{42}}{33} & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$ |