

1 triclinic/oblique (3 families)

1.1 OD groupoid family #1

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \\ \{ \quad - \quad - \quad (-) \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P1$$

1.2 OD groupoid family #2

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \} \\ [0, \quad 0] \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}\bar{1}$$

1.3 OD groupoid family #3

$$\begin{array}{c} p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P\bar{1}$$

2 monoclinic/oblique (12 families)

2.1 OD groupoid family #1

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \\ \{ \quad - \quad - \quad (2_2) \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}112_1$$

2.2 OD groupoid family #2

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \\ \{ \quad - \quad - \quad (n_{r,s}) \} \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \} \\ [0, \quad 0] \end{array}$$

May be simplified to:

$$\begin{array}{c} p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \{ \quad - \quad - \quad (2_2/n_{r'',s''}) \quad \} \end{array}$$

2.3 OD groupoid family #3

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \\ \{ \quad - \quad - \quad (n_{r,s}) \quad \} \\ \{ \quad - \quad - \quad (n_{r',s'}) \quad \} \end{array}$$

2.4 OD groupoid family #4

$$\begin{array}{c} p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \{ \quad - \quad - \quad (2_2/n_{r,s}) \quad \} \end{array}$$

2.5 OD groupoid family #5

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \\ \{ \quad - \quad - \quad (2_2) \quad \} \\ [r, \quad s] \end{array}$$

2.6 OD groupoid family #6

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \\ \{ \quad \bar{1} \quad \bar{1} \quad (n_{r,s}) \quad \} \\ \{ \quad \bar{1} \quad \bar{1} \quad (n_{r',s'}) \quad \} \end{array}$$

2.7 OD groupoid family #7

$$\begin{array}{c} p \quad 1 \quad 1 \quad (m) \\ \{ \quad \bar{1} \quad \bar{1} \quad (2_2) \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{c'=2c}112_1/m$$

2.8 OD groupoid family #8

$$\begin{array}{c} p \quad 1 \quad 1 \quad (m) \\ \{ \quad - \quad - \quad (n_{r,s}) \quad \} \end{array}$$

2.9 OD groupoid family #9

$$\begin{array}{c} p \quad 1 \quad 1 \quad (a) \\ \{ \quad \bar{1} \quad \bar{1} \quad (2_2) \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}112_1/a$$

2.10 OD groupoid family #10

$$\begin{array}{c} p \quad 1 \quad 1 \quad (a) \\ \{ \quad - \quad - \quad (n_{r,s}) \quad \} \end{array}$$

2.11 OD groupoid family #11

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2/m) \\ \{ \quad \bar{1} \quad \bar{1} \quad (2_2/n_{r,s}) \quad \} \end{array}$$

2.12 OD groupoid family #12

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2/a) \\ \{ \quad \bar{1} \quad \bar{1} \quad (2_2/n_{r,s}) \quad \} \end{array}$$

3 monoclinic/rectangular (25 families)

3.1 OD groupoid family #1

$$\begin{array}{c} op \quad p \quad 1 \quad 1 \quad (1) \\ \{ \quad c_2 \quad - \quad (-) \quad \} \\ [0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}c11$$

3.2 OD groupoid family #2

$$\begin{array}{c} op \quad c \quad 1 \quad 1 \quad (1) \\ \left\{ \begin{array}{c} c_2 \\ n_{1,2} \\ [0] \end{array} \quad - \quad (-) \right\} \end{array}$$

Is fully ordered and equivalent to:

$$C_{\mathbf{c}'=2\mathbf{c}}c11$$

3.3 OD groupoid family #3

$$\begin{array}{c} op \quad p \quad 1 \quad 1 \quad (1) \\ \{ \quad 2_r \quad - \quad (-) \quad \} \\ [0] \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \quad \} \\ [0, \quad 0] \end{array}$$

May be simplified to:

$$op \quad p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \{ \quad 2_{r''}/c_2 \quad - \quad (-) \quad \}$$

3.4 OD groupoid family #4

$$op \quad p \quad 1 \quad 1 \quad (1) \\ \{ \quad 2_r \quad - \quad (-) \quad \} \\ [0] \\ \{ \quad 2_{r'} \quad - \quad (-) \quad \} \\ [0]$$

3.5 OD groupoid family #5

$$op \quad c \quad 1 \quad 1 \quad (1) \\ \left\{ \begin{array}{c} 2_r \\ 2_{r+1} \end{array} \right. \quad - \quad (-) \quad \left. \right\} \\ [0] \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \quad \} \\ [0, \quad 0]$$

May be simplified to:

$$op \quad c \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \left\{ \begin{array}{c} 2_{r''} \\ c_2 \\ 2_{r''+1} \\ n_{1,2} \end{array} \right. \quad - \quad (-) \quad \left. \right\}$$

3.6 OD groupoid family #6

$$op \quad c \quad 1 \quad 1 \quad (1) \\ \left\{ \begin{array}{c} 2_r \\ 2_{r+1} \end{array} \right. \quad - \quad (-) \quad \left. \right\} \\ [0] \\ \left\{ \begin{array}{c} 2_{r'} \\ 2_{r'+1} \end{array} \right. \quad - \quad (-) \quad \left. \right\} \\ [0]$$

3.7 OD groupoid family #7

$$op \quad p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \\ \{ \quad 2_r/c_2 \quad - \quad (-) \quad \}$$

3.8 OD groupoid family #8

$$op \quad \left\{ \begin{array}{ccc} c & \bar{1} & \bar{1} \quad (\bar{1}) \\ & 2_r & \\ & c_2 & - \quad (-) \\ & 2_{r+1} & \\ & n_{1,2} & \end{array} \right\}$$

3.9 OD groupoid family #9

$$\begin{array}{ccccc} p & 2 & 1 & (1) & \\ \{ & 2_r & - & (-) & \} \\ & & [0] & & \end{array}$$

3.10 OD groupoid family #10

$$\begin{array}{ccccc} p & 2 & 1 & (1) & \\ \{ & c_2 & \bar{1} & (\bar{1}) & \} \\ & & [0] & & \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}2/c11$$

3.11 OD groupoid family #11

$$\begin{array}{ccccc} p & 2_1 & 1 & (1) & \\ \{ & 2_r & - & (-) & \} \\ & & [0] & & \end{array}$$

3.12 OD groupoid family #12

$$\begin{array}{ccccc} p & 2_1 & 1 & (1) & \\ \{ & c_2 & \bar{1} & (\bar{1}) & \} \\ & & [0] & & \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=2\mathbf{c}}2_1/c11$$

3.13 OD groupoid family #13

$$\begin{array}{ccccc} c & 2 & 1 & (1) & \\ \left\{ & 2_r & - & (-) & \right\} \\ & 2_{r+1} & & & \\ & & [0] & & \end{array}$$

3.14 OD groupoid family #14

$$\left\{ \begin{array}{ccc} c & 2 & 1 \quad (1) \\ c_2 & \bar{1} & (\bar{1}) \\ n_{1,2} & & \\ [0] & & \end{array} \right\}$$

Is fully ordered and equivalent to:

$$C_{c'=2c}2/c11$$

3.15 OD groupoid family #15

$$\left\{ \begin{array}{ccc} p & m & 1 \quad (1) \\ c_2 & - & (-) \\ [r] & & \end{array} \right\}$$

3.16 OD groupoid family #16

$$\left\{ \begin{array}{ccc} p & m & 1 \quad (1) \\ 2_r & \bar{1} & (\bar{1}) \\ [0] & & \\ \{ & 2_{r'} & \bar{1} \quad (\bar{1}) \} \\ [0] & & \end{array} \right\}$$

3.17 OD groupoid family #17

$$\left\{ \begin{array}{ccc} p & b & 1 \quad (1) \\ c_2 & - & (-) \\ [r] & & \end{array} \right\}$$

3.18 OD groupoid family #18

$$\left\{ \begin{array}{ccc} p & b & 1 \quad (1) \\ 2_r & \bar{1} & (\bar{1}) \\ [-\frac{1}{2}] & & \\ \{ & 2_{r'} & \bar{1} \quad (\bar{1}) \} \\ [-\frac{1}{2}] & & \end{array} \right\}$$

3.19 OD groupoid family #19

$$\left\{ \begin{array}{ccc} c & m & 1 \quad (1) \\ c_2 & - & (-) \\ n_{1,2} & & \\ [r] & & \end{array} \right\}$$

3.20 OD groupoid family #20

$$\begin{array}{c} c \quad m \quad 1 \quad (1) \\ \left\{ \begin{array}{c} 2_r \\ 2_{r+1} \end{array} \quad \bar{1} \quad (\bar{1}) \right\} \\ [0] \\ \left\{ \begin{array}{c} 2_{r'} \\ 2_{r'+1} \end{array} \quad \bar{1} \quad (\bar{1}) \right\} \\ [0] \end{array}$$

3.21 OD groupoid family #21

$$\begin{array}{c} p \quad 2/m \quad 1 \quad (1) \\ \{ \quad 2_r/c_2 \quad \bar{1} \quad (\bar{1}) \quad \} \end{array}$$

3.22 OD groupoid family #22

$$\begin{array}{c} p \quad 2_1/m \quad 1 \quad (1) \\ \{ \quad 2_r/c_2 \quad \bar{1} \quad (\bar{1}) \quad \} \end{array}$$

3.23 OD groupoid family #23

$$\begin{array}{c} p \quad 2/b \quad 1 \quad (1) \\ \{ \quad 2_r/c_2 \quad \bar{1} \quad (\bar{1}) \quad \} \end{array}$$

3.24 OD groupoid family #24

$$\begin{array}{c} p \quad 2_1/b \quad 1 \quad (1) \\ \{ \quad 2_r/c_2 \quad \bar{1} \quad (\bar{1}) \quad \} \end{array}$$

3.25 OD groupoid family #25

$$\begin{array}{c} c \quad 2/m \quad 1 \quad (1) \\ \left(\begin{array}{c} 2_r \\ c_2 \\ 2_{r+1} \\ n_{1,2} \end{array} \quad \bar{1} \quad (\bar{1}) \right) \end{array}$$

4 orthorhombic/rectangular (91 families)

4.1 OD groupoid family #1

$$\begin{array}{c} op \quad p \quad 1 \quad 1 \quad (1) \\ \{ \quad 2_r \quad - \quad (-) \quad \} \\ [0] \\ \{ \quad - \quad 2_{s'} \quad (-) \quad \} \\ [0] \end{array}$$

4.2 OD groupoid family #2

$$\begin{array}{ccccc}
op & c & 1 & 1 & (1) \\
& \left\{ \begin{array}{cc} 2_r & - \\ 2_{r+1} & \end{array} \right. & & (-) & \left. \right\} \\
& & [0] & & \\
& \left\{ \begin{array}{cc} - & 2_{s'} \\ [0] & 2_{s'+1} \end{array} \right. & & (-) & \left. \right\}
\end{array}$$

4.3 OD groupoid family #3

$$\begin{array}{ccccc}
op & p & 1 & 1 & (1) \\
& \left\{ \begin{array}{cc} - & - \\ 2_{r'} & - \end{array} \right. & & (n_{r,s}) & \left. \right\} \\
& & [0] & & (-) & \left. \right\}
\end{array}$$

4.4 OD groupoid family #4

$$\begin{array}{ccccc}
op & c & 1 & 1 & (1) \\
& \left\{ \begin{array}{cc} - & - \\ 2_{r'} & - \end{array} \right. & & \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) & \left. \right\} \\
& \left\{ \begin{array}{cc} 2_{r'} & - \\ 2_{r'+1} & \end{array} \right. & & (-) & \left. \right\} \\
& & [0] & &
\end{array}$$

4.5 OD groupoid family #5

$$\begin{array}{ccccc}
op & p & 1 & 1 & (2) \\
& \left\{ \begin{array}{cc} n_{r,2} & n_{2,s} \end{array} \right. & & (-) & \left. \right\}
\end{array}$$

4.6 OD groupoid family #6

$$\begin{array}{ccccc}
op & c & 1 & 1 & (2) \\
& \left\{ \begin{array}{cc} n_{r,2} & n_{2,s} \\ n_{r+1,2} & n_{2,s+1} \end{array} \right. & & (-) & \left. \right\}
\end{array}$$

4.7 OD groupoid family #7

$$\begin{array}{ccccc}
op & p & 1 & 1 & (2) \\
& \left\{ \begin{array}{cc} 2_s & 2_r \end{array} \right. & & (-) & \left. \right\} \\
& \left\{ \begin{array}{cc} 2_{s'} & 2_{r'} \end{array} \right. & & (-) & \left. \right\}
\end{array}$$

4.8 OD groupoid family #8

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_s & 2_r \\ 2_{s+1} & 2_{r+1} \end{array} \right. & \begin{array}{c} (2) \\ (-) \end{array} \\ \left\{ \begin{array}{cc} 2_{s'} & 2_{r'} \\ 2_{s'+1} & 2_{r'+1} \end{array} \right. & (-) \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ 2_s \\ 2_{s'} \\ 2_{s'+1} \end{array}} \right\}$$

4.9 OD groupoid family #9

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} \bar{1} & \bar{1} \\ 2_{s'} & 2_{r'} \end{array} \right. & \begin{array}{c} (2) \\ (n_{r,s}) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ \bar{1} \\ 2_{s'} \end{array}} \right\}$$

4.10 OD groupoid family #10

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} \bar{1} & \bar{1} \\ 2_{s'} & 2_{r'} \end{array} \right. & \begin{array}{c} (2) \\ \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ \bar{1} \\ 2_{s'} \\ 2_{s'+1} \end{array}} \right\}$$

4.11 OD groupoid family #11

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} n_{s,2} & 2_s \end{array} \right. & \begin{array}{c} (m) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ n_{s,2} \end{array}} \right\}$$

[0]

4.12 OD groupoid family #12

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} n_{s,2} & 2_s \\ n_{s+1,2} & 2_{s+1} \end{array} \right. & \begin{array}{c} (m) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ n_{s,2} \\ n_{s+1,2} \end{array}} \right\}$$

[0]

4.13 OD groupoid family #13

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_r & n_{2,r-1} \end{array} \right. & \begin{array}{c} (a) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ 2_r \end{array}} \right\}$$

[0]

4.14 OD groupoid family #14

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} n_{s,2} & 2_s \end{array} \right. & \begin{array}{c} (a) \\ (-) \end{array} \end{array} \quad \left. \vphantom{\begin{array}{c} 1 \\ n_{s,2} \end{array}} \right\}$$

[0]

4.15 OD groupoid family #15

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} n_{s,2} & 2_{s+\frac{1}{2}} \\ n_{s+1,2} & 2_{s+\frac{3}{2}} \end{array} \right. & \begin{array}{c} (d^+) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} [0] \end{array} \right\}$$

4.16 OD groupoid family #16

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} n_{s,2} & 2_{s+1} \end{array} \right. & \begin{array}{c} (n) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} [0] \end{array} \right\}$$

4.17 OD groupoid family #17

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_r & n_{2,r-1} \\ 2_{r+1} & n_{2,r} \end{array} \right. & \begin{array}{c} (e) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} [0] \end{array} \right\}$$

4.18 OD groupoid family #18

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_s/n_{r,2} & 2_r/n_{2,s} \end{array} \right. & \begin{array}{c} (2/m) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} \end{array} \right\}$$

4.19 OD groupoid family #19

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left(\begin{array}{cc} 2_s & 2_r \\ n_{r,2} & n_{2,s} \\ 2_{s+1} & 2_{r+1} \\ n_{r+1,2} & n_{2,s+1} \end{array} \right. & \begin{array}{c} (2/m) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} \end{array} \right\}$$

4.20 OD groupoid family #20

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_s/n_{r,2} & 2_r/n_{2,s-1} \end{array} \right. & \begin{array}{c} (2/a) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} \end{array} \right\}$$

4.21 OD groupoid family #21

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left(\begin{array}{cc} 2_s & 2_{r+\frac{1}{2}} \\ n_{r,2} & n_{2,s-\frac{1}{2}} \\ 2_{s+1} & 2_{r+\frac{3}{2}} \\ n_{r+1,2} & n_{2,s+\frac{1}{2}} \end{array} \right. & \begin{array}{c} (2/d^+) \\ (-) \end{array} \end{array} \quad \left. \begin{array}{c} \end{array} \right\}$$

4.22 OD groupoid family #22

$$op \quad p \quad \begin{array}{cc} 1 & 1 \\ \{ & 2_s/n_{r,2} \quad 2_{r+1}/n_{2,s-1} \end{array} \quad \begin{array}{c} (2/n) \\ (-) \end{array} \quad \}$$

4.23 OD groupoid family #23

$$op \quad c \quad \begin{array}{cc} 1 & 1 \\ \left\{ \begin{array}{cc} 2_s & 2_r \\ n_{r,2} & n_{2,s+1} \\ 2_{s+1} & 2_{r+1} \\ n_{r+1,2} & n_{2,s+2} \end{array} \right. & \begin{array}{c} (2/e) \\ (-) \end{array} \end{array} \quad \}$$

4.24 OD groupoid family #24

$$p \quad \begin{array}{cc} 2 & 1 \\ \{ & - \quad 2_s \end{array} \quad \begin{array}{c} (1) \\ (2_2) \end{array} \quad \} \\ [0]$$

4.25 OD groupoid family #25

$$p \quad \begin{array}{cc} 2 & 1 \\ \{ & - \quad n_{2,r} \end{array} \quad \begin{array}{c} (1) \\ (n_{r,s}) \end{array} \quad \}$$

4.26 OD groupoid family #26

$$p \quad \begin{array}{cc} 2_1 & 1 \\ \{ & - \quad 2_s \end{array} \quad \begin{array}{c} (1) \\ (2_2) \end{array} \quad \} \\ [0]$$

4.27 OD groupoid family #27

$$p \quad \begin{array}{cc} 2_1 & 1 \\ \{ & - \quad n_{2,r+1} \end{array} \quad \begin{array}{c} (1) \\ (n_{r,s}) \end{array} \quad \}$$

4.28 OD groupoid family #28

$$c \quad \begin{array}{cc} 2 & 1 \\ \left\{ \begin{array}{cc} - & 2_s \\ & 2_{s+1} \end{array} \right. & \begin{array}{c} (1) \\ (2_2) \end{array} \end{array} \quad \} \\ [0]$$

4.29 OD groupoid family #29

$$c \quad \begin{array}{cc} 2 & 1 \\ \left\{ \begin{array}{cc} - & n_{2,r} \\ & n_{2,r+1} \end{array} \right. & \begin{array}{c} (1) \\ \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \end{array} \end{array} \quad \}$$

4.30 OD groupoid family #30

$$\begin{array}{ccccccc} p & m & 1 & (1) \\ \{ & - & n_{2,r} & (2_2) & \} \\ & & [0] & & \end{array}$$

4.31 OD groupoid family #31

$$\begin{array}{ccccccc} p & m & 1 & (1) \\ \{ & - & 2_s & (n_{r,s}) & \} \\ \{ & - & 2_{s'} & (n_{r',s'}) & \} \end{array}$$

4.32 OD groupoid family #32

$$\begin{array}{ccccccc} p & m & 1 & (1) \\ \{ & 2_r & \bar{1} & (\bar{1}) & \} \\ & & [0] & & \\ \{ & - & 2_{s'} & (n_{r',s'}) & \} \end{array}$$

4.33 OD groupoid family #33

$$\begin{array}{ccccccc} p & b & 1 & (1) \\ \{ & - & n_{2,r} & (2_2) & \} \\ & & [0] & & \end{array}$$

4.34 OD groupoid family #34

$$\begin{array}{ccccccc} p & b & 1 & (1) \\ \{ & - & 2_{s-1} & (n_{r,s}) & \} \\ \{ & - & 2_{s'+1} & (n_{r',s'}) & \} \end{array}$$

4.35 OD groupoid family #35

$$\begin{array}{ccccccc} p & b & 1 & (1) \\ \{ & 2_r & \bar{1} & (\bar{1}) & \} \\ & & [0] & & \\ \{ & - & 2_{s'+1} & (n_{r',s'}) & \} \end{array}$$

4.36 OD groupoid family #36

$$\begin{array}{ccccccc} c & m & 1 & (1) \\ \left\{ & - & n_{2,r} & (2_2) & \right\} \\ & & n_{2,r+1} & & \\ & & [0] & & \end{array}$$

4.37 OD groupoid family #37

$$\left\{ \begin{array}{ccc} c & m & 1 \\ - & 2_s & (1) \\ - & 2_{s+1} & \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \\ - & 2_{s'} & \left(\begin{array}{c} n_{r',s'} \\ n_{r'+1,s'+1} \end{array} \right) \\ - & 2_{s'+1} & \end{array} \right\}$$

4.38 OD groupoid family #38

$$\left\{ \begin{array}{ccc} c & m & 1 \\ 2_r & \bar{1} & (1) \\ 2_{r+1} & & (\bar{1}) \\ & [0] & \\ - & 2_{s'} & \left(\begin{array}{c} n_{r',s'} \\ n_{r'+1,s'+1} \end{array} \right) \\ & 2_{s'+1} & \end{array} \right\}$$

4.39 OD groupoid family #39

$$\left\{ \begin{array}{ccc} p & 2/m & 1 \\ - & 2_s/n_{2,r} & (1) \\ & & (2_2/n_{r,s}) \end{array} \right\}$$

4.40 OD groupoid family #40

$$\left\{ \begin{array}{ccc} p & 2_1/m & 1 \\ - & 2_s/n_{2,r+1} & (1) \\ & & (2_2/n_{r,s}) \end{array} \right\}$$

4.41 OD groupoid family #41

$$\left\{ \begin{array}{ccc} p & 2/b & 1 \\ - & 2_{s+1}/n_{2,r} & (1) \\ & & (2_2/n_{r,s}) \end{array} \right\}$$

4.42 OD groupoid family #42

$$\left\{ \begin{array}{ccc} p & 2_1/b & 1 \\ - & 2_{s+1}/n_{2,r+1} & (1) \\ & & (2_2/n_{r,s}) \end{array} \right\}$$

4.43 OD groupoid family #43

$$\left\{ \begin{array}{ccc} c & 2/m & 1 \\ - & 2_s & (1) \\ - & n_{2,r} & \left(\begin{array}{c} 2_2 \\ n_{r,s} \end{array} \right) \\ - & 2_{s+1} & \left(\begin{array}{c} n_{r+1,s+1} \end{array} \right) \\ - & n_{2,r+1} & \end{array} \right\}$$

4.44 OD groupoid family #44

$$\begin{array}{cccc} p & 2 & 2 & (2) \\ \{ & 2_s & 2_r & (2_2) \} \end{array}$$

4.45 OD groupoid family #45

$$\begin{array}{cccc} p & 2 & 2 & (2) \\ \{ & n_{s,2} & n_{2,r} & (n_{r,s}) \} \end{array}$$

4.46 OD groupoid family #46

$$\begin{array}{cccc} p & 2_1 & 2 & (2) \\ \{ & 2_s & 2_r & (2_2) \} \end{array}$$

4.47 OD groupoid family #47

$$\begin{array}{cccc} p & 2_1 & 2 & (2) \\ \{ & n_{s,2} & n_{2,r+1} & (n_{r,s}) \} \end{array}$$

4.48 OD groupoid family #48

$$\begin{array}{cccc} p & 2_1 & 2_1 & (2) \\ \{ & 2_s & 2_r & (2_2) \} \end{array}$$

4.49 OD groupoid family #49

$$\begin{array}{cccc} p & 2_1 & 2_1 & (2) \\ \{ & n_{s+1,2} & n_{2,r+1} & (n_{r,s}) \} \end{array}$$

4.50 OD groupoid family #50

$$\begin{array}{cccc} c & 2 & 2 & (2) \\ \left\{ \begin{array}{ccc} 2_s & 2_r & (2_2) \\ 2_{s+1} & 2_{r+1} & \end{array} \right\} \end{array}$$

4.51 OD groupoid family #51

$$\begin{array}{cccc} c & 2 & 2 & (2) \\ \left\{ \begin{array}{ccc} n_{s,2} & n_{2,r} & \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \\ n_{s+1,2} & n_{2,r+1} & \end{array} \right\} \end{array}$$

4.52 OD groupoid family #52

$$\begin{array}{cccc} p & m & m & (2) \\ \{ & n_{r,2} & n_{2,s} & (2_2) \} \end{array}$$

4.53 OD groupoid family #53

$$\begin{array}{cccc} p & m & m & (2) \\ \{ & 2_r & 2_s & (n_{r,s}) \} \\ \{ & 2_{r'} & 2_{s'} & (n_{r',s'}) \} \end{array}$$

4.54 OD groupoid family #54

$$\begin{array}{cccc} p & m & a & (2) \\ \{ & n_{r,2} & n_{2,s} & (2_2) \} \end{array}$$

4.55 OD groupoid family #55

$$\begin{array}{cccc} p & m & a & (2) \\ \{ & 2_{r-1} & 2_s & (n_{r,s}) \} \\ \{ & 2_{r'+1} & 2_{s'} & (n_{r',s'}) \} \end{array}$$

4.56 OD groupoid family #56

$$\begin{array}{cccc} p & b & a & (2) \\ \{ & n_{r,2} & n_{2,s} & (2_2) \} \end{array}$$

4.57 OD groupoid family #57

$$\begin{array}{cccc} p & b & a & (2) \\ \{ & 2_{r-1} & 2_{s-1} & (n_{r,s}) \} \\ \{ & 2_{r'+1} & 2_{s'+1} & (n_{r',s'}) \} \end{array}$$

4.58 OD groupoid family #58

$$\begin{array}{cccc} c & m & m & (2) \\ \left\{ \begin{array}{ccc} n_{r,2} & n_{2,s} & (2_2) \end{array} \right\} \\ \left\{ \begin{array}{ccc} n_{r+1,2} & n_{2,s+1} & \end{array} \right\} \end{array}$$

4.59 OD groupoid family #59

$$\begin{array}{cccc} c & m & m & (2) \\ \left\{ \begin{array}{ccc} 2_r & 2_s & \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \end{array} \right\} \\ \left\{ \begin{array}{ccc} 2_{r'} & 2_{s'} & \left(\begin{array}{c} n_{r',s'} \\ n_{r'+1,s'+1} \end{array} \right) \end{array} \right\} \end{array}$$

4.60 OD groupoid family #60

$$\begin{array}{cccc} p & m & 2 & (m) \\ \{ & n_{s,2} & 2_s & (n_{r,s}) \} \end{array}$$

4.61 OD groupoid family #61

$$\begin{array}{cccc} p & m & 2 & (m) \\ \{ & 2_r & n_{2,r} & (2_2) \} \\ & & [0] & \end{array}$$

4.62 OD groupoid family #62

$$\begin{array}{cccc} p & m & 2_1 & (b) \\ \{ & n_{s+1,2} & 2_s & (n_{r,s}) \} \end{array}$$

4.63 OD groupoid family #63

$$\begin{array}{cccc} p & m & 2_1 & (b) \\ \{ & 2_r & n_{2,r} & (2_2) \} \\ & & [0] & \end{array}$$

4.64 OD groupoid family #64

$$\begin{array}{cccc} p & b & 2_1 & (m) \\ \{ & n_{s+1,2} & 2_{s+1} & (n_{r,s}) \} \end{array}$$

4.65 OD groupoid family #65

$$\begin{array}{cccc} p & b & 2_1 & (m) \\ \{ & 2_r & n_{2,r} & (2_2) \} \\ & & [0] & \end{array}$$

4.66 OD groupoid family #66

$$\begin{array}{cccc} p & b & 2 & (b) \\ \{ & n_{s,2} & 2_{s+1} & (n_{r,s}) \} \end{array}$$

4.67 OD groupoid family #67

$$\begin{array}{cccc} p & b & 2 & (b) \\ \{ & 2_r & n_{2,r} & (2_2) \} \\ & & [0] & \end{array}$$

4.68 OD groupoid family #68

$$\begin{array}{cccc} p & m & 2 & (a) \\ \{ & n_{s,2} & 2_s & (n_{r,s}) \} \end{array}$$

4.69 OD groupoid family #69

$$\begin{array}{cccc} p & m & 2 & (a) \\ \{ & 2_r & n_{2,r-1} & (2_2) \} \\ & & [0] & \end{array}$$

4.70 OD groupoid family #70

$$\begin{array}{cccc} p & m & 2_1 & (n) \\ \{ & n_{s+1,2} & 2_s & (n_{r,s}) \} \end{array}$$

4.71 OD groupoid family #71

$$\begin{array}{cccc} p & m & 2_1 & (n) \\ \{ & 2_r & n_{2,r+1} & (2_2) \} \\ & & [0] & \end{array}$$

4.72 OD groupoid family #72

$$\begin{array}{cccc} p & b & 2_1 & (a) \\ \{ & n_{s+1,2} & 2_{s+1} & (n_{r,s}) \} \end{array}$$

4.73 OD groupoid family #73

$$\begin{array}{cccc} p & b & 2_1 & (a) \\ \{ & 2_r & n_{2,r+1} & (2_2) \} \\ & & [0] & \end{array}$$

4.74 OD groupoid family #74

$$\begin{array}{cccc} p & b & 2 & (n) \\ \{ & n_{s,2} & 2_{s+1} & (n_{r,s}) \} \end{array}$$

4.75 OD groupoid family #75

$$\begin{array}{cccc} p & b & 2 & (n) \\ \{ & 2_r & n_{2,r-1} & (2_2) \} \\ & & [0] & \end{array}$$

4.76 OD groupoid family #76

$$\begin{array}{cccc} c & m & 2 & (m) \\ \left\{ \begin{array}{ccc} n_{s,2} & 2_s & \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \\ n_{s+1,2} & 2_{s+1} & \end{array} \right\} \end{array}$$

4.77 OD groupoid family #77

$$\left\{ \begin{array}{ccc} c & m & 2 \\ & 2_r & n_{2,r} \\ & 2_{r+1} & n_{2,r+1} \end{array} \begin{array}{c} (m) \\ (2_2) \\ [0] \end{array} \right\}$$

4.78 OD groupoid family #78

$$\left\{ \begin{array}{ccc} c & m & 2 \\ & n_{s,2} & 2_s \\ & n_{s+1,2} & 2_{s+1} \end{array} \begin{array}{c} (e) \\ \left(\begin{array}{c} n_{r,s} \\ n_{r+1,s+1} \end{array} \right) \end{array} \right\}$$

4.79 OD groupoid family #79

$$\left\{ \begin{array}{ccc} c & m & 2 \\ & 2_r & n_{2,r-1} \\ & 2_{r+1} & n_{2,r} \end{array} \begin{array}{c} (e) \\ (2_2) \\ [0] \end{array} \right\}$$

4.80 OD groupoid family #80

$$\left\{ \begin{array}{ccc} p & m & m \\ & 2_r/n_{s,2} & 2_s/n_{2,r} \end{array} \begin{array}{c} (m) \\ (2_2/n_{r,s}) \end{array} \right\}$$

4.81 OD groupoid family #81

$$\left\{ \begin{array}{ccc} p & m & a \\ & 2_{r+1}/n_{s,2} & 2_s/n_{2,r} \end{array} \begin{array}{c} (a) \\ (2_2/n_{r,s}) \end{array} \right\}$$

4.82 OD groupoid family #82

$$\left\{ \begin{array}{ccc} p & b & a \\ & 2_{r+1}/n_{s,2} & 2_{s+1}/n_{2,r} \end{array} \begin{array}{c} (n) \\ (2_2/n_{r,s}) \end{array} \right\}$$

4.83 OD groupoid family #83

$$\left\{ \begin{array}{ccc} p & m & a \\ & 2_{r+1}/n_{s,2} & 2_s/n_{2,r+1} \end{array} \begin{array}{c} (m) \\ (2_2/n_{r,s}) \end{array} \right\}$$

4.84 OD groupoid family #84

$$\left\{ \begin{array}{ccc} p & m & m \\ & 2_r/n_{s,2} & 2_s/n_{2,r+1} \end{array} \begin{array}{c} (a) \\ (2_2/n_{r,s}) \end{array} \right\}$$

4.85 OD groupoid family #85

$$\begin{array}{cccc} p & m & a & (n) \\ \{ & 2_{r+1}/n_{s+1,2} & 2_s/n_{2,r} & (2_2/n_{r,s}) \} \end{array}$$

4.86 OD groupoid family #86

$$\begin{array}{cccc} p & b & a & (a) \\ \{ & 2_{r+1}/n_{s+1,2} & 2_{s+1}/n_{2,r} & (2_2/n_{r,s}) \} \end{array}$$

4.87 OD groupoid family #87

$$\begin{array}{cccc} p & b & a & (m) \\ \{ & 2_{r+1}/n_{s+1,2} & 2_{s+1}/n_{2,r+1} & (2_2/n_{r,s}) \} \end{array}$$

4.88 OD groupoid family #88

$$\begin{array}{cccc} p & b & m & (a) \\ \{ & 2_r/n_{s+1,2} & 2_{s+1}/n_{2,r+1} & (2_2/n_{r,s}) \} \end{array}$$

4.89 OD groupoid family #89

$$\begin{array}{cccc} p & m & m & (n) \\ \{ & 2_r/n_{s+1,2} & 2_s/n_{2,r+1} & (2_2/n_{r,s}) \} \end{array}$$

4.90 OD groupoid family #90

$$\begin{array}{cccc} c & m & m & (m) \\ \left\{ \begin{array}{cc} 2_r & 2_s \\ n_{s,2} & n_{2,r} \\ 2_{r+1} & 2_{s+1} \\ n_{s+1,2} & n_{2,r+1} \end{array} \right. & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ n_{r+1,s+1} \end{array} \right) & \end{array}$$

4.91 OD groupoid family #91

$$\begin{array}{cccc} c & m & m & (e) \\ \left\{ \begin{array}{cc} 2_r & 2_s \\ n_{s,2} & n_{2,r+1} \\ 2_{r+1} & 2_{s+1} \\ n_{s+1,2} & n_{2,r+2} \end{array} \right. & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ n_{r+1,s+1} \end{array} \right) & \end{array}$$

5 tetragonal/square (123 families)

5.1 OD groupoid family #1

$$\begin{array}{cccc} p & 1 & 1 & (1) \\ \{ & - & - & (4_4^-) \\ & [0, & 0] & - \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=4\mathbf{c}}4_3$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^+) \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

5.2 OD groupoid family #2

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^+) \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=4\mathbf{c}}4_1$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^-) \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

5.3 OD groupoid family #3

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad 2_r \quad - \quad (-) \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad (-) \quad - \quad 2 \quad \} \\ [s'] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad 2_r \quad - \quad (-) \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad (-) \quad 2 \quad - \quad \} \\ [s'] \end{array}$$

5.4 OD groupoid family #4

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad 2_r \quad - \quad (-) \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad (-) \quad 2 \quad - \quad \} \\ [s'] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad 2_r \quad - \quad (-) \quad - \quad - \} \\ [0] \\ \{ \quad - \quad - \quad (-) \quad - \quad 2 \} \\ [s'] \end{array}$$

5.5 OD groupoid family #5

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad \left(\overline{4}^-\right) \quad - \quad - \} \\ [0, \quad 0] \\ \{ \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \} \\ [r', \quad s'] \end{array}$$

May be simplified to:

$$\begin{array}{c} p \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \\ \left\{ \quad - \quad - \quad \left(\frac{4_-}{4_-}\right) \quad - \quad - \right\} \\ [r'', \quad s''] \end{array}$$

5.6 OD groupoid family #6

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad \left(\overline{4}^-\right) \quad - \quad - \} \\ [0, \quad 0] \\ \{ \quad - \quad - \quad (-) \quad 2_{r'} \quad - \} \\ [s'] \end{array}$$

5.7 OD groupoid family #7

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad \left(\overline{4}^-\right) \quad - \quad - \} \\ [0, \quad 0] \\ \{ \quad 2_{r'} \quad - \quad (-) \quad - \quad - \} \\ [s'] \end{array}$$

5.8 OD groupoid family #8

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad \left(\overline{4}^-\right) \quad - \quad - \} \\ [0, \quad 0] \\ \{ \quad - \quad - \quad (n_{r',s'}) \quad - \quad - \} \end{array}$$

5.9 OD groupoid family #9

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\overline{4^-} \right) \\ [0, \quad 0] \end{array} \right. \quad - \quad - \quad \left. \right\} \\ \left\{ \begin{array}{ccc} - & - & \left(\overline{4^-} \right) \\ [r', \quad s'] \end{array} \right. \quad - \quad - \quad \left. \right\} \end{array}$$

5.10 OD groupoid family #10

$$\begin{array}{c} p \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \quad \bar{1} \quad \bar{1} \\ \left\{ \begin{array}{ccc} - & - & \left(\frac{4_4^-}{4^-} \right) \\ [r, \quad s] \end{array} \right. \quad - \quad - \quad \left. \right\} \end{array}$$

5.11 OD groupoid family #11

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\frac{4_4^-}{4_4^+} \right) \\ [r, \quad s] \end{array} \right. \quad - \quad - \quad \left. \right\} \end{array}$$

5.12 OD groupoid family #12

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} 2_s & 2_r & (-) \\ \left\{ \begin{array}{ccc} - & - & (-) \end{array} \right. \end{array} \right. \quad 2_{r'} \quad 2_{s'} \quad \left. \right\} \end{array}$$

5.13 OD groupoid family #13

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\frac{\overline{4^-}}{4^+} \right) \\ [r, \quad s] \end{array} \right. \quad - \quad - \quad \left. \right\} \\ \left\{ \begin{array}{ccc} - & - & (-) \end{array} \right. \quad 2_{r'} \quad 2_{s'} \quad \left. \right\} \end{array}$$

5.14 OD groupoid family #14

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\frac{\overline{4^-}}{4^+} \right) \\ [r, \quad s] \end{array} \right. \quad - \quad - \quad \left. \right\} \\ \left\{ \begin{array}{ccc} 2_{s'} & 2_{r'} & (-) \end{array} \right. \quad - \quad - \quad \left. \right\} \end{array}$$

5.15 OD groupoid family #15

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ \left\{ \begin{array}{cc} [r, & s] \\ \overline{1} & \overline{1} \end{array} \quad (n_{r',s'}) \quad \overline{1} \quad \overline{1} \right\} \end{array}$$

5.16 OD groupoid family #16

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ [r, \quad s] \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ [r', \quad s'] \end{array}$$

5.17 OD groupoid family #17

$$\begin{array}{c} p \quad 1 \quad 1 \quad (m) \quad 1 \quad 1 \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ [0, \quad 0] \end{array}$$

5.18 OD groupoid family #18

$$\begin{array}{c} p \quad 1 \quad 1 \quad (a) \quad 1 \quad 1 \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ [0, \quad 0] \end{array}$$

5.19 OD groupoid family #19

$$\begin{array}{c} p \quad 1 \quad 1 \quad (n) \quad 1 \quad 1 \\ \left\{ \begin{array}{cc} - & - \end{array} \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \begin{array}{cc} - & - \end{array} \right\} \\ [0, \quad 0] \end{array}$$

5.20 OD groupoid family #20

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ - & - & - \\ [r, & s] \end{array} \begin{array}{c} (2/m) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ - & - \end{array} \right\}$$

5.21 OD groupoid family #21

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ - & - & - \\ [r, & s] \end{array} \begin{array}{c} (2/a) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ - & - \end{array} \right\}$$

5.22 OD groupoid family #22

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ - & - & - \\ [r, & s] \end{array} \begin{array}{c} (2/n) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ - & - \end{array} \right\}$$

5.23 OD groupoid family #23

$$\left\{ \begin{array}{ccc} p & 2 & 1 \\ - & - & - \\ [s] \end{array} \begin{array}{c} (1) \\ (4_4^-) \end{array} \begin{array}{cc} 1 & 1 \\ - & 2 \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{ccc} p & 2 & 1 \\ - & - & - \\ [s] \end{array} \begin{array}{c} (1) \\ (4_4^+) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & - \end{array} \right\}$$

5.24 OD groupoid family #24

$$\left\{ \begin{array}{ccc} p & 2 & 1 \\ - & - & - \\ [s] \end{array} \begin{array}{c} (1) \\ (4_4^+) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & - \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{ccc} p & 2 & 1 \\ - & - & - \\ [s] \end{array} \begin{array}{c} (1) \\ (4_4^-) \end{array} \begin{array}{cc} 1 & 1 \\ - & 2 \end{array} \right\}$$

5.25 OD groupoid family #25

$$\begin{array}{c} p \quad 2 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad - \quad c_2 \} \\ [s] \end{array}$$

5.26 OD groupoid family #26

$$\begin{array}{c} p \quad 2_1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^-) \quad - \quad 2 \} \\ [s] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2_1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^+) \quad 2 \quad - \} \\ [s] \end{array}$$

5.27 OD groupoid family #27

$$\begin{array}{c} p \quad 2_1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^+) \quad 2 \quad - \} \\ [s] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2_1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^-) \quad - \quad 2 \} \\ [s] \end{array}$$

5.28 OD groupoid family #28

$$\begin{array}{c} p \quad 2_1 \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad - \quad c_2 \} \\ [s] \end{array}$$

5.29 OD groupoid family #29

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2 \quad 1 \\ \{ \quad 2_r \quad - \quad (4_4^-) \quad - \quad - \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2 \quad 1 \\ \{ \quad - \quad 2_s \quad (4_4^+) \quad - \quad - \} \\ [0] \end{array}$$

5.30 OD groupoid family #30

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2 \quad 1 \\ \{ \quad - \quad 2_s \quad (4_4^+) \quad - \quad - \quad \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2 \quad 1 \\ \{ \quad 2_r \quad - \quad (4_4^-) \quad - \quad - \quad \} \\ [0] \end{array}$$

5.31 OD groupoid family #31

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2 \quad 1 \\ \{ \quad n_{s,2} \quad - \quad (\overline{4^-}) \quad - \quad - \quad \} \\ [0] \end{array}$$

5.32 OD groupoid family #32

$$\begin{array}{c} p \quad m \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^-) \quad - \quad c_2 \quad \} \\ [s] \end{array}$$

5.33 OD groupoid family #33

$$\begin{array}{c} p \quad m \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4^-}) \quad 2 \quad - \quad \} \\ [s] \\ \{ \quad 2_{r'} \quad \bar{1} \quad (\bar{1}) \quad \bar{1} \quad \bar{1} \quad \} \\ [s'] \end{array}$$

5.34 OD groupoid family #34

$$\begin{array}{c} p \quad m \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4^-}) \quad 2 \quad - \quad \} \\ [s] \\ \{ \quad - \quad 2_{s'} \quad (n_{r',s'}) \quad - \quad - \quad \} \end{array}$$

5.35 OD groupoid family #35

$$\begin{array}{c} p \quad m \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4^-}) \quad 2 \quad - \quad \} \\ [s] \\ \{ \quad - \quad - \quad (\overline{4^-}) \quad - \quad 2_{r'} \quad \} \\ [s'] \end{array}$$

5.36 OD groupoid family #36

$$\begin{array}{c} p \quad b \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (4_4^-) \quad - \quad c_2 \} \\ [s] \end{array}$$

5.37 OD groupoid family #37

$$\begin{array}{c} p \quad b \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad 2 \quad - \} \\ [s] \\ \{ \quad 2_{r'} \quad \bar{1} \quad (\bar{1}) \quad \bar{1} \quad \bar{1} \} \\ [s'] \end{array}$$

5.38 OD groupoid family #38

$$\begin{array}{c} p \quad b \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad 2 \quad - \} \\ [s] \\ \{ \quad - \quad 2_{s'+1} \quad (n_{r',s'}) \quad - \quad - \} \end{array}$$

5.39 OD groupoid family #39

$$\begin{array}{c} p \quad b \quad 1 \quad (1) \quad 1 \quad 1 \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad 2 \quad - \} \\ [s] \\ \{ \quad - \quad - \quad (\overline{4}^-) \quad - \quad 2_{r'} \} \\ [s'] \end{array}$$

5.40 OD groupoid family #40

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad m \quad 1 \\ \{ \quad n_{s,2} \quad - \quad (4_4^-) \quad - \quad - \} \\ [0] \end{array}$$

5.41 OD groupoid family #41

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad m \quad 1 \\ \{ \quad - \quad 2_s \quad (\overline{4}^-) \quad - \quad - \} \\ [0] \\ \{ \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \quad 2_{r'} \quad \bar{1} \} \\ [s'] \end{array}$$

5.42 OD groupoid family #42

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad m \quad 1 \\ \{ \quad - \quad 2_s \quad \left(\overline{4^-} \right) \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad (n_{r',s'}) \quad - \quad 2_{\frac{r'}{2} - \frac{s'}{2}} \quad \} \end{array}$$

5.43 OD groupoid family #43

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad m \quad 1 \\ \{ \quad - \quad 2_s \quad \left(\overline{4^-} \right) \quad - \quad - \quad \} \\ [0] \\ \{ \quad 2_{r'} \quad - \quad \left(\overline{4^-} \right) \quad - \quad - \quad \} \\ [s'] \end{array}$$

5.44 OD groupoid family #44

$$\begin{array}{c} p \quad 2/m \quad 1 \quad (1) \quad 1 \quad 1 \\ \left\{ \quad - \quad - \quad \left(\overline{\frac{4_4^-}{4^-}} \right) \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad \right\} \end{array}$$

5.45 OD groupoid family #45

$$\begin{array}{c} p \quad 2_1/m \quad 1 \quad (1) \quad 1 \quad 1 \\ \left\{ \quad - \quad - \quad \left(\overline{\frac{4_4^-}{4^-}} \right) \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad \right\} \end{array}$$

5.46 OD groupoid family #46

$$\begin{array}{c} p \quad 2/b \quad 1 \quad (1) \quad 1 \quad 1 \\ \left\{ \quad - \quad - \quad \left(\overline{\frac{4_4^-}{4^-}} \right) \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad \right\} \end{array}$$

5.47 OD groupoid family #47

$$\begin{array}{c} p \quad 2_1/b \quad 1 \quad (1) \quad 1 \quad 1 \\ \left\{ \quad - \quad - \quad \left(\overline{\frac{4_4^-}{4^-}} \right) \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad \right\} \end{array}$$

5.48 OD groupoid family #48

$$\begin{array}{c} p \quad 1 \quad 1 \quad (1) \quad 2/m \quad 1 \\ \left\{ \quad \begin{array}{c} 2_r \\ n_{s,2} \end{array} \quad - \quad \left(\overline{\frac{4_4^-}{4^-}} \right) \quad - \quad - \quad \right\} \end{array}$$

5.49 OD groupoid family #49

$$\left\{ \begin{array}{ccc} p & 2 & 2 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

5.50 OD groupoid family #50

$$\left\{ \begin{array}{ccc} p & 2 & 2 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,r} & n_{2,s} \end{array} \right\}$$

5.51 OD groupoid family #51

$$\left\{ \begin{array}{ccc} p & 2_1 & 2 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

5.52 OD groupoid family #52

$$\left\{ \begin{array}{ccc} p & 2_1 & 2 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,r} & n_{2,s} \end{array} \right\}$$

5.53 OD groupoid family #53

$$\left\{ \begin{array}{ccc} p & 2_1 & 2_1 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

5.54 OD groupoid family #54

$$\left\{ \begin{array}{ccc} p & 2_1 & 2_1 \\ - & - & - \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,r} & n_{2,s} \end{array} \right\}$$

5.55 OD groupoid family #55

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ 2_s & 2_r & 2_r \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 2 & 2 \\ - & - \end{array} \right\}$$

5.56 OD groupoid family #56

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ n_{r,2} & n_{2,s} & \begin{pmatrix} (2) \\ \overline{4}^- \\ \overline{4}^+ \end{pmatrix} \end{array} \begin{array}{cc} 2 & 2 \\ - & - \end{array} \right\}$$

5.57 OD groupoid family #57

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & \begin{pmatrix} (2) \\ \overline{4}_4^- \\ \overline{4}_4^+ \end{pmatrix} \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,r} & n_{2,s} \end{array} \right\}$$

5.58 OD groupoid family #58

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & \begin{pmatrix} (2) \\ \overline{4}^- \\ \overline{4}^+ \end{pmatrix} \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} 2_{r'} & 2_{s'} & (n_{r',s'}) \end{array} \begin{array}{cc} \overline{1} & \overline{1} \end{array} \right\}$$

5.59 OD groupoid family #59

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & \begin{pmatrix} (2) \\ \overline{4}^- \\ \overline{4}^+ \end{pmatrix} \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} - & - & \begin{pmatrix} \overline{4}^- \\ \overline{4}^+ \end{pmatrix} \end{array} \begin{array}{cc} 2_{r'} & 2_{s'} \end{array} \right\}$$

5.60 OD groupoid family #60

$$\left\{ \begin{array}{ccc} p & m & a \\ - & - & \begin{pmatrix} (2) \\ \overline{4}_4^- \\ \overline{4}_4^+ \end{pmatrix} \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,r} & n_{2,s} \end{array} \right\}$$

5.61 OD groupoid family #61

$$\left\{ \begin{array}{ccc} p & m & a \\ - & - & \begin{pmatrix} (2) \\ \overline{4}^- \\ \overline{4}^+ \end{pmatrix} \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} 2_{r'+1} & 2_{s'} & (n_{r',s'}) \end{array} \begin{array}{cc} \overline{1} & \overline{1} \end{array} \right\}$$

5.62 OD groupoid family #62

$$\begin{array}{c} p \quad m \quad a \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} 2_r & 2_s \end{array} \right\} \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} 2_{r'} & 2_{s'} \end{array} \right\} \end{array}$$

5.63 OD groupoid family #63

$$\begin{array}{c} p \quad b \quad a \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \quad \begin{array}{cc} n_{2,r} & n_{2,s} \end{array} \right\} \end{array}$$

5.64 OD groupoid family #64

$$\begin{array}{c} p \quad b \quad a \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} 2_r & 2_s \end{array} \right\} \\ \left\{ \begin{array}{ccc} 2_{r'+1} & 2_{s'+1} & (n_{r',s'}) \end{array} \quad \begin{array}{cc} \bar{1} & \bar{1} \end{array} \right\} \end{array}$$

5.65 OD groupoid family #65

$$\begin{array}{c} p \quad b \quad a \quad (2) \quad 1 \quad 1 \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} 2_r & 2_s \end{array} \right\} \\ \left\{ \begin{array}{ccc} - & - & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} 2_{r'} & 2_{s'} \end{array} \right\} \end{array}$$

5.66 OD groupoid family #66

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad m \quad m \\ \left\{ \begin{array}{ccc} n_{r,2} & n_{2,s} & \left(\begin{array}{c} 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \quad \begin{array}{cc} - & - \end{array} \right\} \end{array}$$

5.67 OD groupoid family #67

$$\begin{array}{c} p \quad 1 \quad 1 \quad (2) \quad m \quad m \\ \left\{ \begin{array}{ccc} 2_s & 2_r & \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \quad \begin{array}{cc} - & - \end{array} \right\} \\ \left\{ \begin{array}{ccc} \bar{1} & \bar{1} & (n_{r',s'}) \end{array} \quad \begin{array}{cc} 2_{\frac{r'}{2} + \frac{s'}{2}} & 2_{\frac{r'}{2} - \frac{s'}{2}} \end{array} \right\} \end{array}$$

5.68 OD groupoid family #68

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & 2_s & 2_r \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} m & m \\ - & - \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & 2_{s'} & 2_{r'} \\ & & \end{array} \begin{array}{c} \left(\begin{array}{c} \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} - & - \end{array} \right\}$$

5.69 OD groupoid family #69

$$\left\{ \begin{array}{ccc} p & m & 2 \\ & - & - \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & c_2 \end{array} \right\}$$

[s]

5.70 OD groupoid family #70

$$\left\{ \begin{array}{ccc} p & m & 2_1 \\ & - & - \end{array} \begin{array}{c} (b) \\ \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & n_{2, \frac{1}{2}} \end{array} \right\}$$

[s]

5.71 OD groupoid family #71

$$\left\{ \begin{array}{ccc} p & b & 2_1 \\ & - & - \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & c_2 \end{array} \right\}$$

[s]

5.72 OD groupoid family #72

$$\left\{ \begin{array}{ccc} p & b & 2 \\ & - & - \end{array} \begin{array}{c} (b) \\ \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & n_{2, -\frac{1}{2}} \end{array} \right\}$$

[s]

5.73 OD groupoid family #73

$$\left\{ \begin{array}{ccc} p & m & 2 \\ & - & - \end{array} \begin{array}{c} (a) \\ \left(\begin{array}{c} \overline{4}_4^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2 & n_{2, \frac{1}{2}} \end{array} \right\}$$

[s]

5.74 OD groupoid family #74

$$\left\{ \begin{array}{ccc} p & m & 2_1 \\ - & - & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (n) \\ 2 \end{array} \begin{array}{c} 1 \\ c_2 \end{array} \right\}_{[s]}$$

5.75 OD groupoid family #75

$$\left\{ \begin{array}{ccc} p & b & 2_1 \\ - & - & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (a) \\ 2 \end{array} \begin{array}{c} 1 \\ n_{2,-\frac{1}{2}} \end{array} \right\}_{[s]}$$

5.76 OD groupoid family #76

$$\left\{ \begin{array}{ccc} p & b & 2 \\ - & - & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (n) \\ 2 \end{array} \begin{array}{c} 1 \\ c_2 \end{array} \right\}_{[s]}$$

5.77 OD groupoid family #77

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ n_{s,2} & 2_s & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (m) \\ - \end{array} \begin{array}{c} m \\ - \end{array} \right\}_{[0]}$$

5.78 OD groupoid family #78

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ n_{s,2} & 2_{s-1} & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (e) \\ - \end{array} \begin{array}{c} m \\ - \end{array} \right\}_{[0]}$$

5.79 OD groupoid family #79

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & \left(\frac{4_4^-}{4^+} \right) \end{array} \begin{array}{c} (m) \\ 2_r \\ n_{2,s} \end{array} \begin{array}{c} 1 \\ 2_s \\ n_{2,r} \end{array} \right\}$$

5.80 OD groupoid family #80

$$\left\{ \begin{array}{ccc} p & m & a \\ - & - & - \end{array} \begin{array}{c} (a) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_{s+\frac{1}{2}} \\ n_{2,s} & n_{2,r-\frac{1}{2}} \end{array} \right\}$$

5.81 OD groupoid family #81

$$\left\{ \begin{array}{ccc} p & b & a \\ - & - & - \end{array} \begin{array}{c} (n) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \\ n_{2,s} & n_{2,r-1} \end{array} \right\}$$

5.82 OD groupoid family #82

$$\left\{ \begin{array}{ccc} p & m & a \\ - & - & - \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \\ n_{2,s} & n_{2,r} \end{array} \right\}$$

5.83 OD groupoid family #83

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & - \end{array} \begin{array}{c} (a) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_{s-\frac{1}{2}} \\ n_{2,s} & n_{2,r+\frac{1}{2}} \end{array} \right\}$$

5.84 OD groupoid family #84

$$\left\{ \begin{array}{ccc} p & m & a \\ - & - & - \end{array} \begin{array}{c} (n) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_{s+1} \\ n_{2,s} & n_{2,r} \end{array} \right\}$$

5.85 OD groupoid family #85

$$\left\{ \begin{array}{ccc} p & b & a \\ - & - & - \end{array} \begin{array}{c} (a) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_{s+\frac{1}{2}} \\ n_{2,s} & n_{2,r-\frac{1}{2}} \end{array} \right\}$$

5.86 OD groupoid family #86

$$\left\{ \begin{array}{ccc} p & b & a \\ - & - & - \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \\ n_{2,s} & n_{2,r} \end{array} \right\}$$

5.87 OD groupoid family #87

$$\left\{ \begin{array}{ccc} p & b & m \\ - & - & - \end{array} \begin{array}{c} (a) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_{s-\frac{1}{2}} \\ n_{2,s} & n_{2,r+\frac{1}{2}} \end{array} \right\}$$

5.88 OD groupoid family #88

$$\left\{ \begin{array}{ccc} p & m & m \\ - & - & - \end{array} \begin{array}{c} (n) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ 2_r & 2_s \\ n_{2,s} & n_{2,r+1} \end{array} \right\}$$

5.89 OD groupoid family #89

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ 2_s & 2_r & \\ n_{r,2} & n_{2,s} & \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} m & m \\ - & - \end{array} \right\}$$

5.90 OD groupoid family #90

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & 2_s & 2_{r-1} \\ & n_{r,2} & n_{2,s+1} \end{array} \begin{array}{c} (e) \\ \left(\begin{array}{c} 4_4^- \\ 4_4^+ \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} m & m \\ - & - \end{array} \right\}$$

5.91 OD groupoid family #91

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & - & - \\ & [r, & s] \end{array} \begin{array}{c} (4) \\ \left(\begin{array}{c} 2_2 \\ 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ - & - \end{array} \right\}$$

5.92 OD groupoid family #92

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & n_{r,2} & n_{2,s} \end{array} \begin{array}{c} (4) \\ (-) \end{array} \begin{array}{cc} 1 & 1 \\ n_{2,-\frac{r}{2}+\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.93 OD groupoid family #93

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & 2_s & 2_r \end{array} \begin{array}{c} (4) \\ (-) \end{array} \begin{array}{cc} 1 & 1 \\ 2_{\frac{r}{2}+\frac{s}{2}} & 2_{-\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & 2_{s'} & 2_{r'} \end{array} \begin{array}{c} (-) \end{array} \begin{array}{cc} 2_{\frac{r'}{2}+\frac{s'}{2}} & 2_{-\frac{r'}{2}+\frac{s'}{2}} \end{array} \right\}$$

5.94 OD groupoid family #94

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & \bar{1} & \bar{1} \end{array} \begin{array}{c} (4) \\ \left(\begin{array}{c} n_{r,s} \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ \bar{1} & \bar{1} \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & 2_{s'} & 2_{r'} \end{array} \begin{array}{c} (-) \end{array} \begin{array}{cc} 2_{\frac{r'}{2}+\frac{s'}{2}} & 2_{-\frac{r'}{2}+\frac{s'}{2}} \end{array} \right\}$$

5.95 OD groupoid family #95

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & \bar{1} & \bar{1} \end{array} \begin{array}{c} (4) \\ \left(\begin{array}{c} n_{r,s} \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ \bar{1} & \bar{1} \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & \bar{1} & \bar{1} \end{array} \begin{array}{c} \left(\begin{array}{c} n_{r',s'} \\ \overline{4}^- \\ \overline{4}^+ \end{array} \right) \end{array} \begin{array}{cc} \bar{1} & \bar{1} \end{array} \right\}$$

5.96 OD groupoid family #96

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & - & - \\ & [r, & s] \end{array} \begin{array}{c} (\bar{4}) \\ \left(\begin{array}{c} 2_2 \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ - & - \end{array} \right\}$$

5.97 OD groupoid family #97

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ 2_s & 2_r & (-) \end{array} \begin{array}{c} (\bar{4}) \\ n_{2, -\frac{r}{2} + \frac{s}{2}} \end{array} \begin{array}{cc} 1 & 1 \\ n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.98 OD groupoid family #98

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ n_{r,2} & n_{2,s} & (-) \end{array} \begin{array}{c} (\bar{4}) \\ 2_{\frac{r}{2} + \frac{s}{2}} \end{array} \begin{array}{cc} 1 & 1 \\ 2_{-\frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.99 OD groupoid family #99

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ \bar{1} & \bar{1} & \end{array} \begin{array}{c} (\bar{4}) \\ \left(\begin{array}{c} n_{r,s} \\ 4_4^- \\ 4_4^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ \bar{1} & \bar{1} \end{array} \right\}$$

5.100 OD groupoid family #100

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ \bar{1} & \bar{1} & \end{array} \begin{array}{c} (4/m) \\ \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) \end{array} \begin{array}{cc} 1 & 1 \\ \bar{1} & \bar{1} \end{array} \right\}$$

5.101 OD groupoid family #101

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ 2_s/n_{r,2} & 2_r/n_{2,s} & (-) \end{array} \begin{array}{c} (4/m) \\ 2_{\frac{r}{2} + \frac{s}{2}}/n_{2, -\frac{r}{2} + \frac{s}{2}} \end{array} \begin{array}{cc} 1 & 1 \\ 2_{-\frac{r}{2} + \frac{s}{2}}/n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.102 OD groupoid family #102

$$\left\{ \begin{array}{ccc} p & 1 & 1 \\ & & (4/n) \\ & & 2_2 \\ & & n_{r,s} \\ \bar{1} & \bar{1} & \begin{pmatrix} 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{pmatrix} \\ & & \bar{1} \quad \bar{1} \end{array} \right\}$$

5.103 OD groupoid family #103

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & (4/n) & 1 & 1 \\ \{ & 2_s/n_{r,2} & 2_{r+1}/n_{2,s-1} & (-) & 2_{\frac{r}{2}+\frac{s}{2}+\frac{1}{2}}/n_{2,-\frac{r}{2}+\frac{s}{2}-\frac{1}{2}} & 2_{-\frac{r}{2}+\frac{s}{2}-\frac{1}{2}}/n_{2,\frac{r}{2}+\frac{s}{2}-\frac{1}{2}} & \} \end{array} \right\}$$

5.104 OD groupoid family #104

$$\left\{ \begin{array}{ccc} p & 2 & 2 \\ & & (4) \\ & & 2_2 \\ 2_s & 2_r & \begin{pmatrix} 4_4^- \\ 4_4^+ \end{pmatrix} \\ & & 2_{\frac{r}{2}+\frac{s}{2}} \quad 2_{-\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.105 OD groupoid family #105

$$\left\{ \begin{array}{ccc} p & 2 & 2 \\ & & (4) \\ & & 2_2 \\ n_{s,2} & n_{2,r} & \begin{pmatrix} n_{r,s} \\ \bar{4}^- \\ \bar{4}^+ \end{pmatrix} \\ & & n_{2,\frac{r}{2}-\frac{s}{2}} \quad n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.106 OD groupoid family #106

$$\left\{ \begin{array}{ccc} p & 2_1 & 2_1 \\ & & (4) \\ & & 2_2 \\ 2_s & 2_r & \begin{pmatrix} 4_4^- \\ 4_4^+ \end{pmatrix} \\ & & 2_{\frac{r}{2}+\frac{s}{2}} \quad 2_{-\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.107 OD groupoid family #107

$$\left\{ \begin{array}{ccc} p & 2_1 & 2_1 \\ & & (4) \\ & & 2_2 \\ n_{s-1,2} & n_{2,r+1} & \begin{pmatrix} n_{r,s} \\ \bar{4}^- \\ \bar{4}^+ \end{pmatrix} \\ & & n_{2,\frac{r}{2}-\frac{s}{2}+1} \quad n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.108 OD groupoid family #108

$$\left\{ \begin{array}{ccccc} p & m & m & (4) & m & m \\ & n_{r,2} & n_{2,s} & \begin{pmatrix} 2_2 \\ 4_4^- \\ 4_4^+ \end{pmatrix} & n_{2,-\frac{r}{2}+\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.109 OD groupoid family #109

$$\left\{ \begin{array}{ccccc} p & m & m & (4) & m & m \\ & 2_r & 2_s & \begin{pmatrix} n_{r,s} \\ 4^- \\ 4^+ \end{pmatrix} & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccc} & 2_{r'} & 2_{s'} & \begin{pmatrix} n_{r',s'} \\ 4^- \\ 4^+ \end{pmatrix} & 2_{\frac{r'}{2}+\frac{s'}{2}} & 2_{\frac{r'}{2}-\frac{s'}{2}} \end{array} \right\}$$

5.110 OD groupoid family #110

$$\left\{ \begin{array}{ccccc} p & b & a & (4) & m & m \\ & n_{r,2} & n_{2,s} & \begin{pmatrix} 2_2 \\ 4_4^- \\ 4_4^+ \end{pmatrix} & n_{2,-\frac{r}{2}+\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.111 OD groupoid family #111

$$\left\{ \begin{array}{ccccc} p & b & a & (4) & m & m \\ & 2_{r+1} & 2_{s-1} & \begin{pmatrix} n_{r,s} \\ 4^- \\ 4^+ \end{pmatrix} & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}+1} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccc} & 2_{r'+1} & 2_{s'-1} & \begin{pmatrix} n_{r',s'} \\ 4^- \\ 4^+ \end{pmatrix} & 2_{\frac{r'}{2}+\frac{s'}{2}} & 2_{\frac{r'}{2}-\frac{s'}{2}+1} \end{array} \right\}$$

5.112 OD groupoid family #112

$$\left\{ \begin{array}{ccccc} p & 2 & 2 & (\bar{4}) & m & m \\ & n_{s,2} & n_{2,r} & \begin{pmatrix} n_{r,s} \\ 4_4^- \\ 4_4^+ \end{pmatrix} & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \end{array} \right\}$$

5.113 OD groupoid family #113

$$\left\{ \begin{array}{ccccc} p & 2 & 2 & (\bar{4}) & m & m \\ & 2_s & 2_r & \left(\begin{array}{c} 2_2 \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & n_{2, -\frac{r}{2} + \frac{s}{2}} & n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.114 OD groupoid family #114

$$\left\{ \begin{array}{ccccc} p & 2_1 & 2_1 & (\bar{4}) & m & m \\ & n_{s+1,2} & n_{2,r-1} & \left(\begin{array}{c} n_{r,s} \\ 4_4^- \\ 4_4^+ \end{array} \right) & 2_{\frac{r}{2} + \frac{s}{2}} & 2_{\frac{r}{2} - \frac{s}{2} - 1} \end{array} \right\}$$

5.115 OD groupoid family #115

$$\left\{ \begin{array}{ccccc} p & 2_1 & 2_1 & (\bar{4}) & m & m \\ & 2_s & 2_r & \left(\begin{array}{c} 2_2 \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & n_{2, -\frac{r}{2} + \frac{s}{2}} & n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.116 OD groupoid family #116

$$\left\{ \begin{array}{ccccc} p & m & m & (\bar{4}) & 2 & 2 \\ & 2_r & 2_s & \left(\begin{array}{c} n_{r,s} \\ 4_4^- \\ 4_4^+ \end{array} \right) & n_{2, \frac{r}{2} - \frac{s}{2}} & n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.117 OD groupoid family #117

$$\left\{ \begin{array}{ccccc} p & m & m & (\bar{4}) & 2 & 2 \\ & n_{r,2} & n_{2,s} & \left(\begin{array}{c} 2_2 \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2} + \frac{s}{2}} & 2_{-\frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.118 OD groupoid family #118

$$\left\{ \begin{array}{ccccc} p & b & a & (\bar{4}) & 2 & 2 \\ & 2_{r-1} & 2_{s+1} & \left(\begin{array}{c} n_{r,s} \\ 4_4^- \\ 4_4^+ \end{array} \right) & n_{2, \frac{r}{2} - \frac{s}{2} - 1} & n_{2, \frac{r}{2} + \frac{s}{2}} \end{array} \right\}$$

5.119 OD groupoid family #119

$$\left\{ \begin{array}{ccccc} p & b & a & (\bar{4}) & 2 & 2 \\ & n_{r,2} & n_{2,s} & \left(\begin{array}{c} 2_2 \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{-\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.120 OD groupoid family #120

$$\left\{ \begin{array}{ccccc} p & m & m & (4/m) & m & m \\ & 2_r & 2_s & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \\ & n_{s,2} & n_{2,r} & & n_{2,\frac{r}{2}-\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.121 OD groupoid family #121

$$\left\{ \begin{array}{ccccc} p & b & a & (4/n) & m & m \\ & 2_{r+1} & 2_{s+1} & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2}+\frac{s}{2}+1} & 2_{\frac{r}{2}-\frac{s}{2}} \\ & n_{s,2} & n_{2,r} & & n_{2,\frac{r}{2}-\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.122 OD groupoid family #122

$$\left\{ \begin{array}{ccccc} p & b & a & (4/m) & m & m \\ & 2_{r+1} & 2_{s-1} & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}+1} \\ & n_{s-1,2} & n_{2,r+1} & & n_{2,\frac{r}{2}-\frac{s}{2}+1} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

5.123 OD groupoid family #123

$$\left\{ \begin{array}{ccccc} p & m & m & (4/n) & m & m \\ & 2_r & 2_s & \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 4_4^- \\ 4_4^+ \\ \bar{4}^- \\ \bar{4}^+ \end{array} \right) & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \\ & n_{s+1,2} & n_{2,r+1} & & n_{2,\frac{r}{2}-\frac{s}{2}} & n_{2,\frac{r}{2}+\frac{s}{2}+1} \end{array} \right\}$$

6 trigonal/hexagonal (46 families)

6.1 OD groupoid family #1

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^-) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=3\mathbf{c}}3_2$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^+) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

6.2 OD groupoid family #2

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^+) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=3\mathbf{c}}3_1$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^-) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

6.3 OD groupoid family #3

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (-) \quad 2_s \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad 2_{r'} \quad - \quad \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (-) \quad 2_s \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad - \quad 2 \quad \} \\ [s'] \end{array}$$

6.4 OD groupoid family #4

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad - \quad - \quad - \quad (-) \quad 2_s \quad - \quad - \quad \} \\
 [0] \\
 \{ \quad - \quad - \quad - \quad (-) \quad - \quad - \quad 2 \quad \} \\
 [s']
 \end{array}$$

Is enantiomorph of:

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad - \quad - \quad - \quad (-) \quad 2_s \quad - \quad - \quad \} \\
 [0] \\
 \{ \quad - \quad - \quad - \quad (-) \quad - \quad 2_{r'} \quad - \quad \} \\
 [0]
 \end{array}$$

6.5 OD groupoid family #5

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad - \quad 2 \quad (-) \quad - \quad - \quad - \quad \} \\
 [s']
 \end{array}$$

Is enantiomorph of:

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad 2 \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s']
 \end{array}$$

6.6 OD groupoid family #6

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad 2 \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s']
 \end{array}$$

Is enantiomorph of:

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad - \quad 2 \quad (-) \quad - \quad - \quad - \quad \} \\
 [s']
 \end{array}$$

6.7 OD groupoid family #7

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \\ \{ \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad \} \\ [r', \quad s'] \end{array}$$

May be simplified to:

$$\begin{array}{c} p \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \\ \left\{ \quad - \quad - \quad - \quad \left(\frac{3_3^-}{\overline{3}} \right) \quad - \quad - \quad - \quad \right\} \\ [r'', \quad s''] \end{array}$$

6.8 OD groupoid family #8

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \\ \{ \quad - \quad - \quad - \quad (-) \quad 2_{s'} \quad - \quad - \quad \} \\ [r'] \end{array}$$

6.9 OD groupoid family #9

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \\ \{ \quad 2_{r'} \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\ [s'] \end{array}$$

6.10 OD groupoid family #10

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \\ \{ \quad - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \quad \} \\ [r', \quad s'] \end{array}$$

6.11 OD groupoid family #11

$$\begin{array}{c} p \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \\ \left\{ \quad - \quad - \quad - \quad \left(\frac{3_3^-}{\overline{3}} \right) \quad - \quad - \quad - \quad \right\} \\ [r, \quad s] \end{array}$$

6.12 OD groupoid family #12

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^-) \quad - \quad - \quad 2 \quad \} \\ [s] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^+) \quad 2_s \quad - \quad - \quad \} \\ [0] \end{array}$$

6.13 OD groupoid family #13

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^+) \quad 2_s \quad - \quad - \quad \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3_3^-) \quad - \quad - \quad 2 \quad \} \\ [s] \end{array}$$

6.14 OD groupoid family #14

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2 \quad 1 \\ \{ \quad - \quad - \quad - \quad (3^-) \quad - \quad - \quad c_2 \quad \} \\ [s] \end{array}$$

6.15 OD groupoid family #15

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad 2 \quad - \quad (3_3^-) \quad - \quad - \quad - \quad \} \\ [s] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad 2 \quad (3_3^+) \quad - \quad - \quad - \quad \} \\ [s] \end{array}$$

6.16 OD groupoid family #16

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad 2 \quad (3_3^+) \quad - \quad - \quad - \quad \} \\ [s] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad 2 \quad - \quad (3_3^-) \quad - \quad - \quad - \quad \} \\ [s] \end{array}$$

6.17 OD groupoid family #17

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad n_{2,r} \quad - \quad (\overline{3^-}) \quad - \quad - \quad - \quad \} \\ [0] \end{array}$$

6.18 OD groupoid family #18

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad - \quad - \quad - \quad (\overline{3_3^-}) \quad - \quad - \quad c_2 \quad \} \\ [s] \end{array}$$

6.19 OD groupoid family #19

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad n_{2,r} \quad - \quad (\overline{3_3^-}) \quad - \quad - \quad - \quad \} \\ [0] \end{array}$$

6.20 OD groupoid family #20

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad - \quad - \quad - \quad (\overline{3^-}) \quad 2_s \quad - \quad - \quad \} \\ [0] \\ \{ \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad 2_{r'} \quad \overline{1} \quad \} \\ [s'] \end{array}$$

6.21 OD groupoid family #21

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad - \quad - \quad - \quad (\overline{3^-}) \quad 2_s \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad - \quad - \quad (\overline{3^-}) \quad - \quad - \quad 2_{r'} \quad \} \\ [s'] \end{array}$$

6.22 OD groupoid family #22

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad 2 \quad (\overline{3^-}) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad 2_{r'} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad \} \\ [s'] \end{array}$$

6.23 OD groupoid family #23

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad 2 \quad \left(\overline{3^-} \right) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad - \quad 2_{r'} \quad - \quad \left(\overline{3^-} \right) \quad - \quad - \quad - \quad \} \\ [s'] \end{array}$$

6.24 OD groupoid family #24

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2/m \quad 1 \\ \left\{ \quad - \quad - \quad - \quad \left(\begin{array}{c} 3_3^- \\ \overline{3^-} \end{array} \right) \quad - \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad \right\} \end{array}$$

6.25 OD groupoid family #25

$$\begin{array}{c} p \quad 2/m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \quad - \quad \begin{array}{c} 2_r \\ n_{2,s} \end{array} \quad - \quad \left(\begin{array}{c} 3_3^- \\ \overline{3^-} \end{array} \right) \quad - \quad - \quad - \quad \right\} \end{array}$$

6.26 OD groupoid family #26

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (3) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (-) \quad n_{2,r} \quad n_{2,s} \quad n_{2,r+s} \quad \} \end{array}$$

6.27 OD groupoid family #27

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (3) \quad 1 \quad 1 \quad 1 \\ \{ \quad n_{r,2} \quad n_{2,s} \quad n_{2,-r+s} \quad (-) \quad - \quad - \quad - \quad \} \end{array}$$

6.28 OD groupoid family #28

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (3) \quad 1 \quad 1 \quad 1 \\ \left\{ \quad - \quad - \quad - \quad \left(\begin{array}{c} 3_3^- \\ 3_3^+ \end{array} \right) \quad - \quad - \quad - \quad \right\} \\ [r, \quad s] \end{array}$$

6.29 OD groupoid family #29

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (3) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (-) \quad 2_r \quad 2_s \quad 2_{-r+s} \quad \} \\ \{ \quad - \quad - \quad - \quad (-) \quad 2_{r'} \quad 2_{s'} \quad 2_{-r'+s'} \quad \} \end{array}$$

6.30 OD groupoid family #30

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \{ & 2_r & 2_s & 2_{r+s} & (-) & - & - & - \} \\ \{ & 2_{r'} & 2_{s'} & 2_{r'+s'} & (-) & - & - & - \} \end{array}$$

6.31 OD groupoid family #31

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \left\{ \begin{array}{cccc} \bar{1} & \bar{1} & \bar{1} & \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \right. & \bar{1} & \bar{1} & \bar{1} \\ [r, & s] & & & & & & \\ \{ & - & - & - & (-) & 2_{r'} & 2_{s'} & 2_{-r'+s'} \} \end{array}$$

6.32 OD groupoid family #32

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \left\{ \begin{array}{cccc} \bar{1} & \bar{1} & \bar{1} & \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \right. & \bar{1} & \bar{1} & \bar{1} \\ [r, & s] & & & & & & \\ \{ & 2_{r'} & 2_{s'} & 2_{r'+s'} & (-) & - & - & - \} \end{array}$$

6.33 OD groupoid family #33

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \left\{ \begin{array}{cccc} \bar{1} & \bar{1} & \bar{1} & \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \right. & \bar{1} & \bar{1} & \bar{1} \\ [r, & s] & & & & & & \\ \left\{ \begin{array}{cccc} \bar{1} & \bar{1} & \bar{1} & \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \right. & \bar{1} & \bar{1} & \bar{1} \\ [r', & s'] & & & & & & \end{array}$$

6.34 OD groupoid family #34

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (\bar{3}) & 1 & 1 & 1 \\ \{ & - & - & - & (-) & 2_r/n_{2,s} & 2_{\frac{r}{2}+\frac{s}{2}}/n_{2,\frac{3r}{2}-\frac{s}{2}} & 2_{-\frac{r}{2}+\frac{s}{2}}/n_{2,\frac{3r}{2}+\frac{s}{2}} \} \end{array}$$

6.35 OD groupoid family #35

$$\begin{array}{ccccccccc} p & 1 & 1 & 1 & (\bar{3}) & 1 & 1 & 1 \\ \{ & 2_r/n_{s,2} & 2_{-\frac{r}{2}+\frac{3s}{2}}/n_{2,\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}+\frac{3s}{2}}/n_{2,\frac{r}{2}-\frac{s}{2}} & (-) & - & - & - \} \end{array}$$

6.36 OD groupoid family #36

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} & \end{array} \begin{array}{c} (\bar{3}) \\ \left(\begin{array}{c} \bar{3}_3^- \\ \bar{3}_3^+ \\ \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} \end{array} \right\} \\ [r, s]$$

6.37 OD groupoid family #37

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ - & - & - & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}_3^- \\ \bar{3}_3^+ \end{array} \right) \end{array} \begin{array}{ccc} 2 & 2 & 2 \\ 2_r & 2_s & 2_{-r+s} \end{array} \right\}$$

6.38 OD groupoid family #38

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \begin{array}{ccc} 2 & 2 & 2 \\ n_{2,r} & n_{2,s} & n_{2,r+s} \end{array} \right\}$$

6.39 OD groupoid family #39

$$\left\{ \begin{array}{cccc} p & 2 & 2 & 2 \\ 2_r & 2_s & 2_{r+s} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}_3^- \\ \bar{3}_3^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & - \end{array} \right\}$$

6.40 OD groupoid family #40

$$\left\{ \begin{array}{cccc} p & 2 & 2 & 2 \\ n_{r,2} & n_{2,s} & n_{2,-r+s} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} \end{array} \right\}$$

6.41 OD groupoid family #41

$$\left\{ \begin{array}{cccc} p & m & m & m \\ n_{r,2} & n_{2,s} & n_{2,-r+s} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}_3^- \\ \bar{3}_3^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & - \end{array} \right\}$$

6.42 OD groupoid family #42

$$\left\{ \begin{array}{cccc} p & m & m & m \\ 2_r & 2_s & 2_{r+s} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} \end{array} \right\} \\ \left\{ \begin{array}{cccc} p & m & m & m \\ 2_{r'} & 2_{s'} & 2_{r'+s'} & \end{array} \begin{array}{c} (3) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ \bar{1} & \bar{1} & \bar{1} \end{array} \right\}$$

6.43 OD groupoid family #43

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & m & m & m \\ - & - & - & \left(\begin{array}{c} \overline{3}_3^- \\ 3_3^+ \end{array} \right) & n_{2,r} & n_{2,s} & n_{2,r+s} \end{array} \right\}$$

6.44 OD groupoid family #44

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & m & m & m \\ \overline{1} & \overline{1} & \overline{1} & \left(\begin{array}{c} \overline{3}^- \\ \overline{3}^+ \end{array} \right) & 2_r & 2_s & 2_{-r+s} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccccc} \overline{1} & \overline{1} & \overline{1} & \left(\begin{array}{c} \overline{3}^- \\ \overline{3}^+ \end{array} \right) & 2_{r'} & 2_{s'} & 2_{-r'+s'} \end{array} \right\}$$

6.45 OD groupoid family #45

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (\overline{3}) & m & m & m \\ \overline{1} & \overline{1} & \overline{1} & \left(\begin{array}{c} \overline{3}_3^- \\ 3_3^+ \\ \overline{3}^- \\ \overline{3}^+ \end{array} \right) & 2_r & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{-\frac{r}{2}+\frac{s}{2}} \\ & & & & n_{2,s} & n_{2,\frac{3r}{2}-\frac{s}{2}} & n_{2,\frac{3r}{2}+\frac{s}{2}} \end{array} \right\}$$

6.46 OD groupoid family #46

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (\overline{3}) & 1 & 1 & 1 \\ 2_r & 2_{-\frac{r}{2}+\frac{3s}{2}} & 2_{\frac{r}{2}+\frac{3s}{2}} & \left(\begin{array}{c} \overline{3}_3^- \\ 3_3^+ \\ \overline{3}^- \\ \overline{3}^+ \end{array} \right) & \overline{1} & \overline{1} & \overline{1} \\ n_{s,2} & n_{2,\frac{r}{2}+\frac{s}{2}} & n_{2,\frac{r}{2}-\frac{s}{2}} & & & & \end{array} \right\}$$

7 hexagonal/hexagonal (100 families)

7.1 OD groupoid family #1

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ - & - & - & (6_6^-) & - & - & - \end{array} \right\}$$

[0, 0]

Is fully ordered and equivalent to:

$$P_{c'=6c}6_5$$

Is enantiomorph of:

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ - & - & - & (6_6^+) & - & - & - \end{array} \right\}$$

[0, 0]

7.2 OD groupoid family #2

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (6_6^+) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

Is fully ordered and equivalent to:

$$P_{\mathbf{c}'=6\mathbf{c}}6_1$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (6_6^-) \quad - \quad - \quad - \quad \} \\ [0, \quad 0] \end{array}$$

7.3 OD groupoid family #3

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad 2_{r'} \quad - \quad \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad - \quad 2 \quad \} \\ [s'] \end{array}$$

7.4 OD groupoid family #4

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad - \quad 2 \quad \} \\ [s'] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad 2 \quad - \quad - \quad (-) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad - \quad - \quad - \quad (-) \quad - \quad 2_{r'} \quad - \quad \} \\ [0] \end{array}$$

7.5 OD groupoid family #5

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ \{ & - & - & - & \left(\overline{3^-}\right) & - & - & - \} \\ & [0, & 0] & & & & & \\ \{ & - & - & - & (n_{r',s'}) & - & - & - \} \end{array}$$

7.6 OD groupoid family #6

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ \{ & - & - & - & \left(\overline{6^-}\right) & - & - & - \} \\ & [0, & 0] & & & & & \\ \{ & \bar{1} & \bar{1} & \bar{1} & (\bar{1}) & \bar{1} & \bar{1} & \bar{1} \} \\ & [r', & s'] & & & & & \end{array}$$

May be simplified to:

$$\begin{array}{ccccccc} p & \bar{1} & \bar{1} & \bar{1} & (\bar{1}) & \bar{1} & \bar{1} & \bar{1} \\ \{ & - & - & - & \left(\overline{\frac{6}{6^-}}\right) & - & - & - \} \\ & [r'', & s''] & & & & & \end{array}$$

7.7 OD groupoid family #7

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ \{ & - & - & - & \left(\overline{6^-}\right) & - & - & - \} \\ & [0, & 0] & & & & & \\ \{ & - & - & - & (-) & 2_{s'} & - & - \} \\ & [r'] & & & & & & \end{array}$$

7.8 OD groupoid family #8

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ \{ & - & - & - & \left(\overline{6^-}\right) & - & - & - \} \\ & [0, & 0] & & & & & \\ \{ & 2_{r'} & - & - & (-) & - & - & - \} \\ & [s'] & & & & & & \end{array}$$

7.9 OD groupoid family #9

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (1) & 1 & 1 & 1 \\ \{ & - & - & - & \left(\overline{6^-}\right) & - & - & - \} \\ & [0, & 0] & & & & & \\ \{ & - & - & - & (n_{r',s'}) & - & - & - \} \end{array}$$

7.10 OD groupoid family #10

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\overline{6}^- \right) \quad - \quad - \quad - \\ [0, \quad 0] \end{array} \right\} \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\overline{3}^- \right) \quad - \quad - \quad - \\ [r', \quad s'] \end{array} \right\} \end{array}$$

7.11 OD groupoid family #11

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\overline{6}^- \right) \quad - \quad - \quad - \\ [0, \quad 0] \end{array} \right\} \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\overline{6}^- \right) \quad - \quad - \quad - \\ [r', \quad s'] \end{array} \right\} \end{array}$$

7.12 OD groupoid family #12

$$\begin{array}{c} p \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\frac{6_6^-}{\overline{6}^-} \right) \quad - \quad - \quad - \\ [r, \quad s] \end{array} \right\} \end{array}$$

7.13 OD groupoid family #13

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\frac{3_3^+}{6_6^-} \right) \quad - \quad - \quad - \\ [r, \quad s] \end{array} \right\} \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\frac{3_3^+}{6_6^-} \right) \quad - \quad - \quad - \\ [r, \quad s] \end{array} \right\} \end{array}$$

7.14 OD groupoid family #14

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (2) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \quad \left(\frac{3_3^+}{6_6^-} \right) \quad - \quad - \quad - \\ [r, \quad s] \end{array} \right\} \end{array}$$

Is enantiomorph of:

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & - & - & - \\ & [r, & s] & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{6}_6^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & - \end{array} \right\}$$

7.15 OD groupoid family #15

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (2) & 1 & 1 & 1 \\ \{ & 2_r & - & - & (-) & 2_s & - & - \} \\ \{ & - & - & 2_{r'} & (-) & - & - & 2_{s'} \} \end{array}$$

Is enantiomorph of:

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (2) & 1 & 1 & 1 \\ \{ & 2_r & - & - & (-) & 2_s & - & - \} \\ \{ & - & 2_{r'} & - & (-) & - & 2_{s'} & - \} \end{array}$$

7.16 OD groupoid family #16

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (2) & 1 & 1 & 1 \\ \{ & 2_r & - & - & (-) & 2_s & - & - \} \\ \{ & - & 2_{r'} & - & (-) & - & 2_{s'} & - \} \end{array}$$

Is enantiomorph of:

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (2) & 1 & 1 & 1 \\ \{ & 2_r & - & - & (-) & 2_s & - & - \} \\ \{ & - & - & 2_{r'} & (-) & - & - & 2_{s'} \} \end{array}$$

7.17 OD groupoid family #17

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & - & - & - \\ & [r, & s] & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & - \end{array} \right\}$$

$$\left\{ \begin{array}{cccc} 2_{r'} & - & - & (-) \\ & & & 2_{s'} \end{array} \begin{array}{ccc} - & - & - \end{array} \right\}$$

7.18 OD groupoid family #18

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & - & - & - \\ & [r, & s] & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & - \end{array} \right\}$$

$$\left\{ \begin{array}{cccc} \overline{1} & \overline{1} & \overline{1} & (n_{r',s'}) \\ & & & \overline{1} \end{array} \begin{array}{ccc} \overline{1} & \overline{1} & \overline{1} \end{array} \right\}$$

7.19 OD groupoid family #19

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [r, \quad s] \end{array} \right. \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [r', \quad s'] \end{array} \right. \quad \left(\begin{array}{c} \overline{3}^- \\ \overline{6}^+ \end{array} \right) \quad - \quad - \quad - \end{array} \left. \vphantom{\begin{array}{c} (2) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}^+ \end{array} \right) \end{array}} \right\}$$

7.20 OD groupoid family #20

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{6}^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [0, \quad 0] \end{array} \right. \end{array} \left. \vphantom{\begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{6}^+ \end{array} \right) \end{array}} \right\}$$

7.21 OD groupoid family #21

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}_6^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [0, \quad 0] \end{array} \right. \end{array} \left. \vphantom{\begin{array}{c} (m) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}_6^+ \end{array} \right) \end{array}} \right\}$$

7.22 OD groupoid family #22

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (a) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{6}^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [0, \quad 0] \end{array} \right. \end{array} \left. \vphantom{\begin{array}{c} (a) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{6}^+ \end{array} \right) \end{array}} \right\}$$

7.23 OD groupoid family #23

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (a) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}_6^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [0, \quad 0] \end{array} \right. \end{array} \left. \vphantom{\begin{array}{c} (a) \\ \left(\begin{array}{c} \overline{3}^- \\ \overline{6}_6^+ \end{array} \right) \end{array}} \right\}$$

7.24 OD groupoid family #24

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad \begin{array}{c} (2/m) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{3}^- \\ \overline{6}_6^+ \\ \overline{6}^+ \end{array} \right) \end{array} \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{c} - \quad - \quad - \\ [r, \quad s] \end{array} \right. \end{array} \left. \vphantom{\begin{array}{c} (2/m) \\ \left(\begin{array}{c} \overline{3}_3^- \\ \overline{3}^- \\ \overline{6}_6^+ \\ \overline{6}^+ \end{array} \right) \end{array}} \right\}$$

7.25 OD groupoid family #25

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (2/a) \\ & & & 1 & 1 & 1 \\ & & & \left(\begin{array}{c} 3_3^- \\ 3^- \\ 6_6^+ \\ \bar{6}^+ \end{array} \right) & - & - & - \\ [r, & s] \end{array} \right\}$$

7.26 OD groupoid family #26

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (1) \\ & 2 & - & - \\ & & & (6_6^-) \\ [s] \end{array} \begin{array}{ccc} 1 & 2 & 1 \\ - & - & - \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (1) \\ & - & - & 2 \\ & & & (6_6^+) \\ [s] \end{array} \begin{array}{ccc} 1 & 2 & 1 \\ - & - & - \end{array} \right\}$$

7.27 OD groupoid family #27

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (1) \\ & - & - & 2 \\ & & & (6_6^+) \\ [s] \end{array} \begin{array}{ccc} 1 & 2 & 1 \\ - & - & - \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (1) \\ & 2 & - & - \\ & & & (6_6^-) \\ [s] \end{array} \begin{array}{ccc} 1 & 2 & 1 \\ - & - & - \end{array} \right\}$$

7.28 OD groupoid family #28

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & & & (1) \\ & n_{s,2} & - & - \\ & & & (\bar{6}^-) \\ [0] \end{array} \begin{array}{ccc} 1 & 2 & 1 \\ - & - & - \end{array} \right\}$$

7.29 OD groupoid family #29

$$\left\{ \begin{array}{cccc} p & 2 & 1 & 1 \\ & & & (1) \\ & - & - & - \\ & & & (6_6^-) \\ [s] \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & - & 2 \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{cccc} p & 2 & 1 & 1 \\ & & & (1) \\ & - & - & - \\ & & & (6_6^+) \\ [0] \end{array} \begin{array}{ccc} 1 & 1 & 1 \\ - & 2_r & - \end{array} \right\}$$

7.30 OD groupoid family #30

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (6_6^+) \quad - \quad 2_r \quad - \quad \} \\ [0] \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (6_6^-) \quad - \quad - \quad 2 \quad \} \\ [s] \end{array}$$

7.31 OD groupoid family #31

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (\bar{6}^-) \quad - \quad - \quad c_2 \quad \} \\ [s] \end{array}$$

7.32 OD groupoid family #32

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad n_{s,2} \quad - \quad - \quad (6_6^-) \quad - \quad - \quad - \quad \} \\ [0] \end{array}$$

7.33 OD groupoid family #33

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \{ \quad - \quad - \quad - \quad (6_6^-) \quad - \quad - \quad c_2 \quad \} \\ [s] \end{array}$$

7.34 OD groupoid family #34

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad - \quad - \quad - \quad (\bar{3}^-) \quad 2_s \quad - \quad - \quad \} \\ [0] \\ \{ \quad - \quad 2_{-\frac{r'}{2}+s'} \quad - \quad (n_{r',s'}) \quad - \quad - \quad - \quad \} \end{array}$$

7.35 OD groupoid family #35

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\ \{ \quad - \quad - \quad 2 \quad (\bar{6}^-) \quad - \quad - \quad - \quad \} \\ [s] \\ \{ \quad \bar{1} \quad \bar{1} \quad \bar{1} \quad (\bar{1}) \quad \bar{1} \quad 2_{r'} \quad \bar{1} \quad \} \\ [s'] \end{array}$$

7.36 OD groupoid family #36

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\
 \{ \quad - \quad - \quad 2 \quad (\overline{6}^-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad 2_{-\frac{r'}{2}+s'} \quad - \quad (n_{r',s'}) \quad - \quad - \quad - \quad \}
 \end{array}$$

7.37 OD groupoid family #37

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\
 \{ \quad - \quad - \quad 2 \quad (\overline{6}^-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad - \quad - \quad (\overline{3}^-) \quad - \quad - \quad 2_{r'} \quad \} \\
 [s']
 \end{array}$$

7.38 OD groupoid family #38

$$\begin{array}{c}
 p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad m \quad 1 \\
 \{ \quad - \quad - \quad 2 \quad (\overline{6}^-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad 2_{r'} \quad - \quad - \quad (\overline{6}^-) \quad - \quad - \quad - \quad \} \\
 [s']
 \end{array}$$

7.39 OD groupoid family #39

$$\begin{array}{c}
 p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad - \quad - \quad 2 \quad (\overline{3}^-) \quad - \quad - \quad - \quad \} \\
 [s] \\
 \{ \quad - \quad - \quad - \quad (n_{r',s'}) \quad 2_{\frac{s'}{2}} \quad - \quad - \quad \}
 \end{array}$$

7.40 OD groupoid family #40

$$\begin{array}{c}
 p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\
 \{ \quad - \quad - \quad - \quad (\overline{6}^-) \quad - \quad 2_r \quad - \quad \} \\
 [0] \\
 \{ \quad 2_{r'} \quad \overline{1} \quad \overline{1} \quad (\overline{1}) \quad \overline{1} \quad \overline{1} \quad \overline{1} \quad \} \\
 [s']
 \end{array}$$

7.41 OD groupoid family #41

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & - & - & \left(\overline{6}^- \right) & - & 2_r & - \end{array} \right\} \\ [0] \\ \left\{ \begin{array}{cccccc} - & - & - & (n_{r',s'}) & 2_{\frac{s'}{2}} & - & - \end{array} \right\} \end{array}$$

7.42 OD groupoid family #42

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & - & - & \left(\overline{6}^- \right) & - & 2_r & - \end{array} \right\} \\ [0] \\ \left\{ \begin{array}{cccccc} - & 2_{r'} & - & \left(\overline{3}^- \right) & - & - & - \end{array} \right\} \\ [s'] \end{array}$$

7.43 OD groupoid family #43

$$\begin{array}{c} p \quad m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & - & - & \left(\overline{6}^- \right) & - & 2_r & - \end{array} \right\} \\ [0] \\ \left\{ \begin{array}{cccccc} - & - & - & \left(\overline{6}^- \right) & - & - & 2_{r'} \end{array} \right\} \\ [s'] \end{array}$$

7.44 OD groupoid family #44

$$\begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (1) \quad 1 \quad 2/m \quad 1 \\ \left\{ \begin{array}{cccccc} 2_r & - & - & \left(\frac{6_6^-}{\overline{6}^-} \right) & - & - & - \end{array} \right\} \\ n_{s,2} \end{array}$$

7.45 OD groupoid family #45

$$\begin{array}{c} p \quad 2/m \quad 1 \quad 1 \quad (1) \quad 1 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & - & - & \left(\frac{6_6^-}{\overline{6}^-} \right) & - & - & 2_r \\ & & & & & & n_{2,s} \end{array} \right\} \end{array}$$

7.46 OD groupoid family #46

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (2) \quad 2 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & 2_r & - & \left(\frac{3_3^-}{6_6^+} \right) & - & 2_s & - \end{array} \right\} \end{array}$$

Is enantiomorph of:

$$\begin{array}{c} p \quad 2 \quad 1 \quad 1 \quad (2) \quad 2 \quad 1 \quad 1 \\ \left\{ \begin{array}{cccccc} - & - & 2_r & \left(\frac{3_3^+}{6_6^-} \right) & - & - & 2_s \end{array} \right\} \end{array}$$

7.47 OD groupoid family #47

$$\left\{ \begin{array}{cccc} p & 2 & 1 & 1 \\ - & - & 2_r & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 3_3^+ \\ 6_6^- \end{array} \right) \end{array} \begin{array}{ccc} 2 & 1 & 1 \\ - & - & 2_s \end{array} \right\}$$

Is enantiomorph of:

$$\left\{ \begin{array}{cccc} p & 2 & 1 & 1 \\ - & 2_r & - & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 3_3^- \\ 6_6^+ \end{array} \right) \end{array} \begin{array}{ccc} 2 & 1 & 1 \\ - & 2_s & - \end{array} \right\}$$

7.48 OD groupoid family #48

$$\left\{ \begin{array}{cccc} p & 2 & 1 & 1 \\ - & n_{2,r} & - & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} 2 & 1 & 1 \\ - & n_{2,s} & - \end{array} \right\}$$

7.49 OD groupoid family #49

$$\left\{ \begin{array}{cccc} p & m & 1 & 1 \\ - & n_{2,r} & - & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} 3_3^- \\ 6_6^+ \end{array} \right) \end{array} \begin{array}{ccc} m & 1 & 1 \\ - & n_{2,s} & - \end{array} \right\}$$

7.50 OD groupoid family #50

$$\left\{ \begin{array}{cccc} p & m & 1 & 1 \\ - & - & 2_r & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} m & 1 & 1 \\ - & - & 2_s \end{array} \right\}$$

$$\left\{ \begin{array}{cccc} 2_{r'} - \frac{s'}{2} & \bar{1} & \bar{1} & \end{array} \begin{array}{c} (n_{r',s'}) \end{array} \begin{array}{ccc} 2_{\frac{s'}{2}} & \bar{1} & \bar{1} \end{array} \right\}$$

7.51 OD groupoid family #51

$$\left\{ \begin{array}{cccc} p & m & 1 & 1 \\ - & - & 2_r & \end{array} \begin{array}{c} (2) \\ \left(\begin{array}{c} \bar{3}^- \\ \bar{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} m & 1 & 1 \\ - & - & 2_s \end{array} \right\}$$

$$\left\{ \begin{array}{cccc} - & 2_{r'} & - & \end{array} \begin{array}{c} \left(\begin{array}{c} \bar{3}^- \\ \bar{6}^+ \end{array} \right) \end{array} \begin{array}{ccc} - & 2_{s'} & - \end{array} \right\}$$

7.52 OD groupoid family #52

$$\left\{ \begin{array}{cccc} p & 1 & 2 & 1 \\ - & - & 2 & \end{array} \begin{array}{c} (m) \\ \left(\begin{array}{c} 3_3^- \\ 6^+ \end{array} \right) \end{array} \begin{array}{ccc} 1 & m & 1 \\ - & - & c_2 \end{array} \right\}$$

[s]

7.53 OD groupoid family #53

$$\left\{ \begin{array}{ccccccc} p & 1 & 2 & 1 & \begin{smallmatrix} (m) \\ \left(\begin{smallmatrix} \overline{3}^- \\ 6_6^+ \end{smallmatrix} \end{smallmatrix} & 1 & m & 1 \\ - & - & c_2 & - & - & - & 2 \end{array} \right\}_{[s]}$$

7.54 OD groupoid family #54

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & \begin{smallmatrix} (m) \\ \left(\begin{smallmatrix} \overline{3}_3^- \\ \overline{6}^+ \end{smallmatrix} \right) & 2 & 1 & 1 \\ - & n_{2,r} & - & - & - & 2_r & - \end{array} \right\}_{[0]}$$

7.55 OD groupoid family #55

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & \begin{smallmatrix} (m) \\ \left(\begin{smallmatrix} \overline{3}^- \\ 6_6^+ \end{smallmatrix} \right) & 2 & 1 & 1 \\ - & 2 & - & - & - & c_2 & - \end{array} \right\}_{[s]}$$

7.56 OD groupoid family #56

$$\left\{ \begin{array}{ccccccc} p & 1 & 2 & 1 & \begin{smallmatrix} (e) \\ \left(\begin{smallmatrix} \overline{3}_3^- \\ \overline{6}^+ \end{smallmatrix} \right) & 1 & m & 1 \\ - & - & 2 & - & - & - & n_{2,-\frac{3}{2}} \end{array} \right\}_{[s]}$$

7.57 OD groupoid family #57

$$\left\{ \begin{array}{ccccccc} p & 1 & 2 & 1 & \begin{smallmatrix} (e) \\ \left(\begin{smallmatrix} \overline{3}^- \\ 6_6^+ \end{smallmatrix} \right) & 1 & m & 1 \\ - & - & c_2 & - & - & - & 2_{-\frac{1}{2}} \end{array} \right\}_{[s]}$$

7.58 OD groupoid family #58

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & \begin{smallmatrix} (e) \\ \left(\begin{smallmatrix} \overline{3}_3^- \\ \overline{6}^+ \end{smallmatrix} \right) & 2 & 1 & 1 \\ - & n_{2,r} & - & - & - & 2_{r-\frac{1}{2}} & - \end{array} \right\}_{[0]}$$

7.59 OD groupoid family #59

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & (e) & 2 & 1 & 1 \\ - & 2 & - & \left(\begin{array}{c} \overline{3}^- \\ 6_6^+ \end{array} \right) & - & n_{2, \frac{1}{2}} & - \end{array} \right\}_{[s]}$$

7.60 OD groupoid family #60

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & (m) & m & 1 & 1 \\ - & 2_r & - & \left(\begin{array}{c} \overline{3}_3^- \\ \overline{3}^- \\ 6_6^+ \\ \overline{6}^+ \end{array} \right) & - & 2_s & - \end{array} \right\}_{n_{2,s}, n_{2,r}}$$

7.61 OD groupoid family #61

$$\left\{ \begin{array}{ccccccc} p & m & 1 & 1 & (e) & m & 1 & 1 \\ - & 2_r & - & \left(\begin{array}{c} \overline{3}_3^- \\ \overline{3}^- \\ 6_6^+ \\ \overline{6}^+ \end{array} \right) & - & 2_{s-\frac{1}{2}} & - \end{array} \right\}_{n_{2,s}, n_{2,r-\frac{1}{2}}}$$

7.62 OD groupoid family #62

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ - & - & - & \left(\begin{array}{c} 2_2 \\ \overline{6}_6^- \\ 6_6^+ \end{array} \right) & - & - & - \end{array} \right\}_{[r, s]}$$

7.63 OD groupoid family #63

$$\begin{array}{l} \{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ 2_r & 2_s & 2_{r+s} & (-) & - & - & - \end{array} \} \\ \{ \begin{array}{ccccccc} - & - & - & (-) & 2_{r'} & 2_{s'} & 2_{-r'+s'} \end{array} \} \end{array}$$

7.64 OD groupoid family #64

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ - & - & - & \left(\begin{array}{c} n_{r,s} \\ \overline{6}^- \\ \overline{6}^+ \end{array} \right) & - & - & - \end{array} \right\}_{(-), 2_{r'}, 2_{s'}, 2_{-r'+s'}}$$

7.65 OD groupoid family #65

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \left\{ \begin{array}{ccccccc} - & - & - & \left(\begin{array}{c} n_{r,s} \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) & - & - & - \end{array} \right\} \\ \{ & 2_{r'} & 2_{s'} & 2_{r'+s'} & (-) & - & - & - \} \end{array}$$

7.66 OD groupoid family #66

$$\begin{array}{cccc} p & (3) & 1 & 1 \\ \left\{ \begin{array}{ccc} \left(\begin{array}{c} n_{r,s} \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) & - & - \end{array} \right\} \\ \left\{ \begin{array}{ccc} \left(\begin{array}{c} n_{r',s'} \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) & - & - \end{array} \right\} \end{array}$$

7.67 OD groupoid family #67

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 1 & 1 & 1 \\ \left\{ \begin{array}{ccccccc} \bar{1} & \bar{1} & \bar{1} & \left(\begin{array}{c} \bar{3}^- \\ \bar{3}^+ \end{array} \right) & \bar{1} & \bar{1} & \bar{1} \end{array} \right\} \\ [r, \quad s] \\ \left\{ \begin{array}{ccccccc} - & - & - & \left(\begin{array}{c} n_{r',s'} \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) & - & - & - \end{array} \right\} \end{array}$$

7.68 OD groupoid family #68

$$\begin{array}{cccc} p & (\bar{3}) & 1 & 1 \\ \left\{ \begin{array}{ccc} \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ \bar{6}_6^- \\ \bar{6}_6^+ \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) & - & - \end{array} \right\} \end{array}$$

7.69 OD groupoid family #69

$$\begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 2 & 2 & 2 \\ \left\{ \begin{array}{ccccccc} 2_r & 2_s & 2_{r+s} & \left(\begin{array}{c} 2_2 \\ \bar{6}_6^- \\ \bar{6}_6^+ \end{array} \right) & - & - & - \end{array} \right\} \end{array}$$

7.70 OD groupoid family #70

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (3) & 2 & 2 & 2 \\ & n_{\frac{s}{2},2} & n_{2,\frac{r}{2}} & n_{2,\frac{r}{2}-\frac{s}{2}} & \begin{pmatrix} n_{r,s} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & - & - & - \end{array} \right\}$$

7.71 OD groupoid family #71

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (3) & 1 & 1 & 1 \\ & - & - & - & \begin{pmatrix} 2_2 \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & 2_r & 2_s & 2_{-r+s} \end{array} \right\}$$

7.72 OD groupoid family #72

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (3) & 1 & 1 & 1 \\ & - & - & - & \begin{pmatrix} n_{r,s} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & n_{2,r-\frac{s}{2}} & n_{2,-\frac{r}{2}+s} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

7.73 OD groupoid family #73

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (3) & 1 & 1 & 1 \\ & - & - & - & \begin{pmatrix} 2_2 \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & n_{2,r} & n_{2,s} & n_{2,r+s} \end{array} \right\}$$

7.74 OD groupoid family #74

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (3) & 1 & 1 & 1 \\ & - & - & - & \begin{pmatrix} n_{r,s} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & 2_{\frac{s}{2}} & 2_{\frac{r}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccccc} & - & - & - & \begin{pmatrix} n_{r',s'} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & 2_{\frac{s'}{2}} & 2_{\frac{r'}{2}} & 2_{\frac{r'}{2}-\frac{s'}{2}} \end{array} \right\}$$

7.75 OD groupoid family #75

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (3) & 1 & 1 & 1 \\ & 2_r & 2_s & 2_{r+s} & \begin{pmatrix} \overline{3}^- \\ \overline{3}^+ \end{pmatrix} & \overline{1} & \overline{1} & \overline{1} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccccc} & - & - & - & \begin{pmatrix} n_{r',s'} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} & 2_{\frac{s'}{2}} & 2_{\frac{r'}{2}} & 2_{\frac{r'}{2}-\frac{s'}{2}} \end{array} \right\}$$

7.76 OD groupoid family #76

$$\left\{ \begin{array}{cccc} p & 1 & 1 & 1 \\ & n_{r,2} & n_{2,s} & n_{2,-r+s} \end{array} \begin{pmatrix} (3) \\ 2_2 \\ \overline{6}_6^- \\ \overline{6}_6^+ \end{pmatrix} \begin{array}{ccc} m & m & m \\ - & - & - \end{array} \right\}$$

7.77 OD groupoid family #77

$$\left\{ \begin{array}{ccc} p & 1 & 1 & 1 \\ & 2_{r-\frac{s}{2}} & 2_{-\frac{r}{2}+s} & 2_{\frac{r}{2}+\frac{s}{2}} \end{array} \begin{pmatrix} (3) \\ n_{r,s} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} \begin{array}{ccc} m & m & m \\ - & - & - \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & 2_{r'-\frac{s'}{2}} & 2_{-\frac{r'}{2}+s'} & 2_{\frac{r'}{2}+\frac{s'}{2}} \end{array} \begin{pmatrix} n_{r',s'} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} \begin{array}{ccc} - & - & - \end{array} \right\}$$

7.78 OD groupoid family #78

$$\left\{ \begin{array}{ccc} p & 1 & 1 & 1 \\ & \overline{1} & \overline{1} & \overline{1} \end{array} \begin{pmatrix} (3) \\ \overline{3}^- \\ \overline{3}^+ \end{pmatrix} \begin{array}{ccc} m & m & m \\ 2_r & 2_s & 2_{-r+s} \end{array} \right\}$$

$$\left\{ \begin{array}{ccc} & 2_{r'-\frac{s'}{2}} & 2_{-\frac{r'}{2}+s'} & 2_{\frac{r'}{2}+\frac{s'}{2}} \end{array} \begin{pmatrix} n_{r',s'} \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} \begin{array}{ccc} - & - & - \end{array} \right\}$$

7.79 OD groupoid family #79

$$\left\{ \begin{array}{ccc} p & 1 & 1 & 1 \\ & 2_{r-\frac{s}{2}} & 2_{-\frac{r}{2}+s} & 2_{\frac{r}{2}+\frac{s}{2}} \\ & n_{\frac{s}{2},2} & n_{2,\frac{r}{2}} & n_{2,\frac{r}{2}-\frac{s}{2}} \end{array} \begin{pmatrix} (\overline{3}) \\ 2_2 \\ n_{r,s} \\ \overline{6}_6^- \\ \overline{6}_6^+ \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} \begin{array}{ccc} m & m & m \\ - & - & - \end{array} \right\}$$

7.80 OD groupoid family #80

$$\left\{ \begin{array}{ccc} p & m & m & m \\ & - & - & - \end{array} \begin{pmatrix} (\overline{3}) \\ 2_2 \\ n_{r,s} \\ \overline{6}_6^- \\ \overline{6}_6^+ \\ \overline{6}^- \\ \overline{6}^+ \end{pmatrix} \begin{array}{ccc} 1 & 1 & 1 \\ 2_{\frac{s}{2}} & 2_{\frac{r}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \\ n_{2,r-\frac{s}{2}} & n_{2,-\frac{r}{2}+s} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

7.81 OD groupoid family #81

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (6) \quad 1 \quad 1 \quad 1 \\ \left(\begin{array}{c} 2_2 \\ 3_3^- \\ 3_3^+ \\ 6_6^- \\ 6_6^+ \end{array} \right) \quad - \quad - \quad - \end{array} \right\}$$

$[r, \quad s]$

7.82 OD groupoid family #82

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (6) \quad 1 \quad 1 \quad 1 \\ n_{r,2} \quad n_{2,s} \quad n_{2,-r+s} \quad (-) \quad n_{2,-r+2s} \quad n_{2,2r-s} \quad n_{2,r+s} \end{array} \right\}$$

7.83 OD groupoid family #83

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (6) \quad 1 \quad 1 \quad 1 \\ 2_r \quad 2_s \quad 2_{r+s} \quad (-) \quad 2_{\frac{r}{3}+\frac{2s}{3}} \quad 2_{\frac{2r}{3}+\frac{s}{3}} \quad 2_{\frac{r}{3}-\frac{s}{3}} \end{array} \right\}$$

$$\left\{ \begin{array}{c} 2_{r'} \quad 2_{s'} \quad 2_{r'+s'} \quad (-) \quad 2_{\frac{r'}{3}+\frac{2s'}{3}} \quad 2_{\frac{2r'}{3}+\frac{s'}{3}} \quad 2_{\frac{r'}{3}-\frac{s'}{3}} \end{array} \right\}$$

7.84 OD groupoid family #84

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (6) \quad 1 \quad 1 \quad 1 \\ \left(\begin{array}{c} n_{r,s} \\ \overline{3}^- \\ \overline{3}^+ \\ \overline{6}^- \\ \overline{6}^+ \end{array} \right) \quad \overline{1} \quad \overline{1} \quad \overline{1} \end{array} \right\}$$

$$\left\{ \begin{array}{c} 2_{r'} \quad 2_{s'} \quad 2_{r'+s'} \quad (-) \quad 2_{\frac{r'}{3}+\frac{2s'}{3}} \quad 2_{\frac{2r'}{3}+\frac{s'}{3}} \quad 2_{\frac{r'}{3}-\frac{s'}{3}} \end{array} \right\}$$

7.85 OD groupoid family #85

$$\left\{ \begin{array}{c} p \quad (6) \quad 1 \quad 1 \\ \left(\begin{array}{c} n_{r,s} \\ \overline{3}^- \\ \overline{3}^+ \\ \overline{6}^- \\ \overline{6}^+ \end{array} \right) \quad \overline{1} \quad \overline{1} \end{array} \right\}$$

$$\left\{ \begin{array}{c} \left(\begin{array}{c} n_{r',s'} \\ \overline{3}^- \\ \overline{3}^+ \\ \overline{6}^- \\ \overline{6}^+ \end{array} \right) \quad \overline{1} \quad \overline{1} \end{array} \right\}$$

7.86 OD groupoid family #86

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (\bar{6}) \quad 1 \quad 1 \quad 1 \\ \left(\begin{array}{c} 2_2 \\ \bar{3}^- \\ \bar{3}^+ \\ 6_6^- \\ 6_6^+ \end{array} \right) \quad \bar{1} \quad \bar{1} \quad \bar{1} \\ [r, \quad s] \end{array} \right\}$$

7.87 OD groupoid family #87

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (\bar{6}) \quad 1 \quad 1 \quad 1 \\ 2_r \quad 2_s \quad 2_{r+s} \quad (-) \quad n_{2,r} \quad n_{2,s} \quad n_{2,r+s} \end{array} \right\}$$

7.88 OD groupoid family #88

$$\left\{ \begin{array}{c} p \quad 1 \quad 1 \quad 1 \quad (\bar{6}) \quad 1 \quad 1 \quad 1 \\ n_{r,2} \quad n_{2,s} \quad n_{2,-r+s} \quad (-) \quad 2_r \quad 2_s \quad 2_{-r+s} \end{array} \right\}$$

7.89 OD groupoid family #89

$$\left\{ \begin{array}{c} p \quad (\bar{6}) \quad 1 \quad 1 \\ \left(\begin{array}{c} n_{r,s} \\ 3_3^- \\ 3_3^+ \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) \quad - \quad - \end{array} \right\}$$

7.90 OD groupoid family #90

$$\left\{ \begin{array}{c} p \quad (6/m) \quad 1 \quad 1 \\ \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 3_3^- \\ 3_3^+ \\ \bar{3}^- \\ \bar{3}^+ \\ 6_6^- \\ 6_6^+ \\ \bar{6}^- \\ \bar{6}^+ \end{array} \right) \quad \bar{1} \quad \bar{1} \end{array} \right\}$$

7.91 OD groupoid family #91

$$\left\{ \begin{array}{ccccccc} p & 1 & 1 & 1 & (6/m) & 1 & 1 & 1 \\ \{ & 2_r/n_{s,2} & 2_{-\frac{r}{2}+\frac{3s}{2}}/n_{2,\frac{r}{2}+\frac{s}{2}} & 2_{\frac{r}{2}+\frac{3s}{2}}/n_{2,\frac{r}{2}-\frac{s}{2}} & (-) & 2_s/n_{2,r} & 2_{\frac{r}{2}+\frac{s}{2}}/n_{2,-\frac{r}{2}+\frac{3s}{2}} & 2_{\frac{r}{2}-\frac{s}{2}}/n_{2,\frac{r}{2}+\frac{3s}{2}} \end{array} \right\}$$

7.92 OD groupoid family #92

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (6) & 2 & 2 & 2 \\ \left(\begin{array}{c} 2_2 \\ 3_3^- \\ 3_3^+ \\ 6_6^- \\ 6_6^+ \end{array} \right) & 2_{\frac{r}{3}+\frac{2s}{3}} & 2_{\frac{2r}{3}+\frac{s}{3}} & 2_{\frac{r}{3}-\frac{s}{3}} \end{array} \right\}$$

7.93 OD groupoid family #93

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (6) & 2 & 2 & 2 \\ \left(\begin{array}{c} n_{r,s} \\ \frac{3}{3}^- \\ \frac{3}{3}^+ \\ \frac{6}{6}^- \\ \frac{6}{6}^+ \end{array} \right) & n_{\frac{s}{2},2} & n_{2,\frac{r}{2}} & n_{2,\frac{r}{2}-\frac{s}{2}} & n_{2,r-\frac{s}{2}} & n_{2,-\frac{r}{2}+s} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

7.94 OD groupoid family #94

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (6) & m & m & m \\ \left(\begin{array}{c} 2_2 \\ 3_3^- \\ 3_3^+ \\ 6_6^- \\ 6_6^+ \end{array} \right) & n_{r,2} & n_{2,s} & n_{2,-r+s} & n_{2,-r+2s} & n_{2,2r-s} & n_{2,r+s} \end{array} \right\}$$

7.95 OD groupoid family #95

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (6) & m & m & m \\ \left(\begin{array}{c} n_{r,s} \\ \frac{3}{3}^- \\ \frac{3}{3}^+ \\ \frac{6}{6}^- \\ \frac{6}{6}^+ \end{array} \right) & 2_{r-\frac{s}{2}} & 2_{-\frac{r}{2}+s} & 2_{\frac{r}{2}+\frac{s}{2}} & 2_{\frac{s}{2}} & 2_{\frac{r}{2}} & 2_{\frac{r}{2}-\frac{s}{2}} \end{array} \right\}$$

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (6) & m & m & m \\ \left(\begin{array}{c} n_{r',s'} \\ \frac{3}{3}^- \\ \frac{3}{3}^+ \\ \frac{6}{6}^- \\ \frac{6}{6}^+ \end{array} \right) & 2_{r'-\frac{s'}{2}} & 2_{-\frac{r'}{2}+s'} & 2_{\frac{r'}{2}+\frac{s'}{2}} & 2_{\frac{s'}{2}} & 2_{\frac{r'}{2}} & 2_{\frac{r'}{2}-\frac{s'}{2}} \end{array} \right\}$$

7.96 OD groupoid family #96

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (\bar{6}) & 2 & 2 & 2 \\ n_{\frac{s}{2}, 2} & n_{2, \frac{r}{2}} & n_{2, \frac{r}{2} - \frac{s}{2}} & \begin{pmatrix} n_{r,s} \\ 3_3^- \\ 3_3^+ \\ \bar{6}^- \\ \bar{6}^+ \end{pmatrix} & 2_{\frac{s}{2}} & 2_{\frac{r}{2}} & 2_{\frac{r}{2} - \frac{s}{2}} \end{array} \right\}$$

7.97 OD groupoid family #97

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (\bar{6}) & 2 & 2 & 2 \\ 2_r & 2_s & 2_{r+s} & \begin{pmatrix} 2_2 \\ \bar{3}^- \\ \bar{3}^+ \\ 6_6^- \\ 6_6^+ \end{pmatrix} & n_{2,r} & n_{2,s} & n_{2,r+s} \end{array} \right\}$$

7.98 OD groupoid family #98

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (\bar{6}) & m & m & m \\ 2_{r-\frac{s}{2}} & 2_{-\frac{r}{2}+s} & 2_{\frac{r}{2}+\frac{s}{2}} & \begin{pmatrix} n_{r,s} \\ 3_3^- \\ 3_3^+ \\ \bar{6}^- \\ \bar{6}^+ \end{pmatrix} & n_{2,r-\frac{s}{2}} & n_{2,-\frac{r}{2}+s} & n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$

7.99 OD groupoid family #99

$$\left\{ \begin{array}{ccccccc} p & 2 & 2 & 2 & (\bar{6}) & m & m & m \\ n_{r,2} & n_{2,s} & n_{2,-r+s} & \begin{pmatrix} 2_2 \\ \bar{3}^- \\ \bar{3}^+ \\ 6_6^- \\ 6_6^+ \end{pmatrix} & 2_r & 2_s & 2_{-r+s} \end{array} \right\}$$

7.100 OD groupoid family #100

$$\left\{ \begin{array}{ccccccc} p & m & m & m & (6/m) & m & m & m \\ \left(\begin{array}{c} 2_2 \\ n_{r,s} \\ 3_3^- \\ 3_3^+ \\ \overline{3}^- \\ \overline{3}^+ \\ 6_6^- \\ 6_6^+ \\ \overline{6}^- \\ \overline{6}^+ \end{array} \right. & \begin{array}{c} 2_{r-\frac{s}{2}} \\ n_{\frac{s}{2},2} \end{array} & \begin{array}{c} 2_{-\frac{r}{2}+s} \\ n_{2,\frac{r}{2}} \end{array} & \begin{array}{c} 2_{\frac{r}{2}+\frac{s}{2}} \\ n_{2,\frac{r}{2}-\frac{s}{2}} \end{array} & & \begin{array}{c} 2_{\frac{s}{2}} \\ n_{2,r-\frac{s}{2}} \end{array} & \begin{array}{c} 2_{\frac{r}{2}} \\ n_{2,-\frac{r}{2}+s} \end{array} & \begin{array}{c} 2_{\frac{r}{2}-\frac{s}{2}} \\ n_{2,\frac{r}{2}+\frac{s}{2}} \end{array} \right\}$$