

3. ADVANCED TOPICS ON SPACE-GROUP SYMMETRY

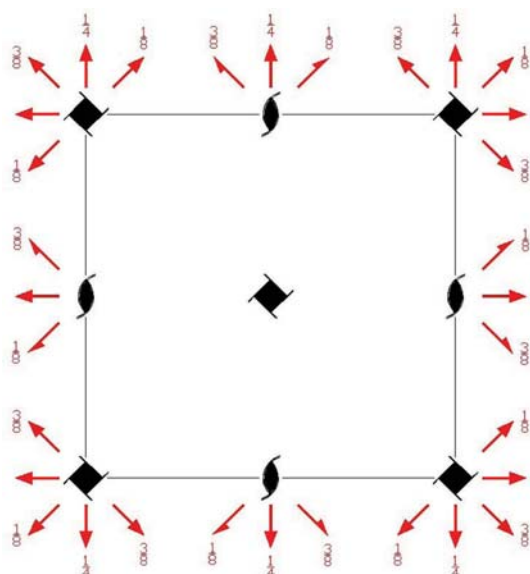


Figure 3.6.3.3  
Symmetry diagram of  $P4_12'2'$

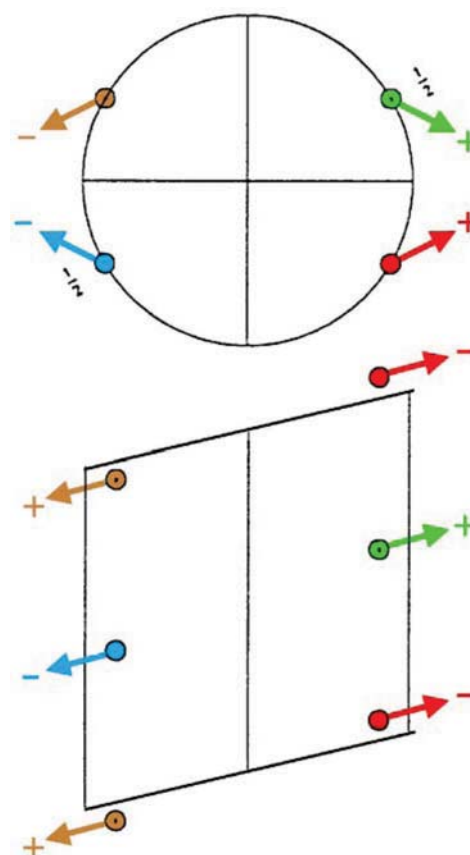


Figure 3.6.3.6  
General-position diagram of rod group 2.3.29  $P2/c'11$ . The positional colour coding is red for  $x > 0$  and  $z > 0$ ; blue for  $x > 0$  and  $z < 0$ ; green for  $x < 0$  and  $z > 0$ ; and brown for  $x < 0$  and  $z < 0$ .

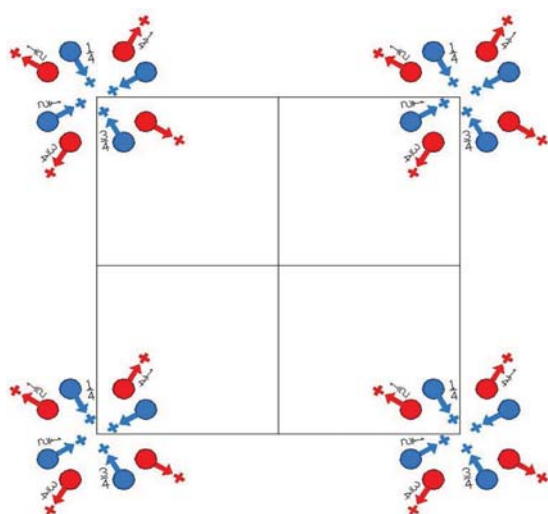


Figure 3.6.3.4  
General-position diagram of  $P4_12'2'$ .

diagram are given. The heights are given as fractions of the shortest translation along the projection direction and, if different from zero, are printed next to the graphical symbol, see Fig. 3.6.3.3.

In the general-position diagrams, the general positions and corresponding magnetic moments are colour coded. Positions with a  $z$  component of  $+z$  are shown as red circles and those with a  $z$  component of  $-z$  are shown as blue circles. If the  $z$  component is either  $h + z$  or  $h - z$  with  $h \neq 0$ , then the height  $h$  is printed next to the general position, see Fig. 3.6.3.4. If two general positions have the same  $x$  component and  $y$  component, but one has a  $z$  component  $+z$  and the other  $-z$ , the positions are shown as a circle with one half coloured red, the other half blue. The magnetic moments are colour coded to the general position to which they are associated, their direction in the plane of projection is given by an arrow in the direction of the projected magnetic moment. A  $+$  or  $-$  sign near the tip of the arrow indicates that the magnetic moment is inclined, respectively, above or below the plane of projection.

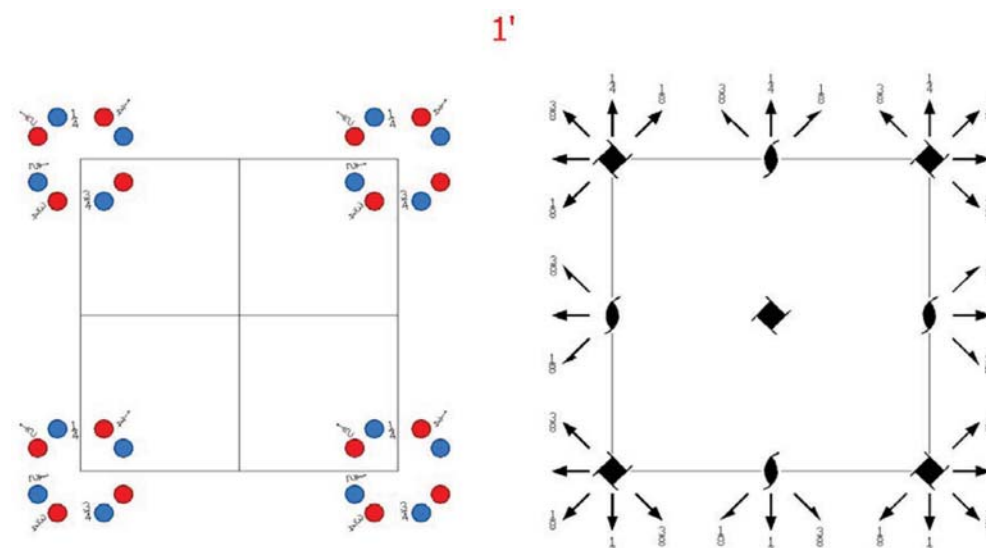


Figure 3.6.3.5  
Diagrams of the magnetic space group  $P4_1221'$ .

For magnetic space groups of the type  $\mathcal{F}1'$ , the symmetry diagram is that of the group  $\mathcal{F}$ . That each