



型的四条正合列的交换图

$$\begin{array}{ccc} \bullet & \xrightarrow{\quad} & \bullet \\ \downarrow & \text{PO} & \downarrow \\ \bullet & \xrightarrow{\quad\cdots\quad} & \bullet \end{array}$$

$$\begin{array}{ccc} \bullet & \xrightarrow{\quad} & \bullet \\ \downarrow & & \downarrow \\ \bullet & \xrightarrow{\quad} & \bullet \end{array}$$

$$\begin{array}{ccc} \bullet & \xrightarrow{\quad\cdots\quad} & \bullet \\ \downarrow & \text{PB} & \downarrow \\ \bullet & \xrightarrow{\quad} & \bullet \end{array}$$