

$$\begin{bmatrix} \vdots \\ \vdots \\ \vdots \end{bmatrix} = \sum_{c=1}^3 \left[ \begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \right] \cdots \sum_{c=1}^3 \left[ \begin{array}{c} \begin{array}{|c|c|} \hline \begin{array}{c} c=1 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \dagger \\ \hline \end{array} \\ \hline \end{array} & \begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=2 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \dagger \\ \hline \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=3 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \dagger \\ \hline \end{array} \\ \hline \end{array} \end{array} \right] \sum_{c=1}^3 \left[ \begin{array}{c} \begin{array}{|c|c|} \hline \begin{array}{c} c=1 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=2 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=3 \\ \hline \begin{array}{|c|c|} \hline \begin{array}{c} \text{diag} \\ \hline * \\ \hline \end{array} & \begin{array}{c} \vdots \\ \vdots \\ \vdots \end{array} \\ \hline \end{array} \end{array} \right] \begin{bmatrix} \vdots \\ \vdots \\ \vdots \end{bmatrix} \left[ \begin{array}{c} \begin{array}{|c|} \hline \begin{array}{c} c=1 \\ \hline \text{diag} \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=2 \\ \hline \begin{array}{|c|} \hline \text{diag} \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=3 \\ \hline \begin{array}{|c|} \hline \text{diag} \end{array} \\ \hline \end{array} \right] \left[ \begin{array}{c} \begin{array}{|c|} \hline \begin{array}{c} c=1 \\ \hline \text{diag} \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=2 \\ \hline \begin{array}{|c|} \hline \text{diag} \end{array} \\ \hline \end{array} \\ \begin{array}{c} c=3 \\ \hline \begin{array}{|c|} \hline \text{diag} \end{array} \\ \hline \end{array} \right] \cdots \end{bmatrix}
 \end{array}$$