

$$\mathbf{A}^T = \left[\begin{array}{c|c|c|c} & & & 0 \\ \hline 0 & & & \\ \hline & \underbrace{\hspace{10em}}_{\mathbf{A}_1^T} & & \\ \hline & \underbrace{\hspace{10em}}_{\mathbf{A}_2^T} & & \\ \hline & \underbrace{\hspace{10em}}_{\mathbf{A}_3^T} & & \\ \hline & \underbrace{\hspace{10em}}_{\mathbf{A}_4^T} & & \end{array} \right]$$