$$\underbrace{\begin{pmatrix} A_{\mathcal{E}\mathcal{E}} & A_{\mathcal{E}\mathcal{I}} \\ A_{\mathcal{I}\mathcal{E}} & A_{\mathcal{I}\mathcal{I}} \end{pmatrix}}_{=A} \underbrace{\begin{pmatrix} A_{\mathcal{E}\mathcal{E}} & A_{\mathcal{E}\mathcal{I}} \\ A_{\mathcal{I}\mathcal{E}} & A_{\mathcal{I}\mathcal{I}} \end{pmatrix}}_{=A} \underbrace{\begin{pmatrix} A_{\mathcal{E}\mathcal{E}} & A_{\mathcal{E}\mathcal{I}} \\ A_{\mathcal{I}\mathcal{E}} & A_{\mathcal{I}\mathcal{I}} \end{pmatrix}}_{=A}$$