

$$\begin{array}{c|cc} & 1 & 0 \\ \hline 0 & | & 0 \\ \hline - & 1 & 0 \\ & 0 & 1 \end{array} \quad 0$$

$$\begin{array}{c|c} I & 0 \\ \hline 0 & -I \end{array}$$

$$\mathbb{R}^2 \mathbb{C}_n^n$$

$$\mathbb{R}_n^{\Omega} \times \mathbb{R}_n^{\Omega}$$

$$\begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} \quad \begin{array}{c|c} & 0 \\ \hline - & \begin{array}{c|c} 1 & 0 \\ \hline 0 & 1 \end{array} \end{array}$$

$$= \frac{n}{2} \mathbb{R}^n$$

$$\begin{array}{c|c} 0 & I \\ \hline I & 0 \end{array}$$

$$g \in {}_4^n\mathbb{R}_n^\Omega \Leftrightarrow \begin{array}{c|cc} g & \mathcal{J} & 0 \\ \hline 0 & -\mathcal{J} & \end{array} g = \begin{array}{c|cc} \mathcal{J} & 0 \\ \hline 0 & -\mathcal{J} & \end{array}$$

$$\overbrace{\frac{0 \mid I}{I \mid 0} - z \underbrace{\frac{0 \mid I}{I \mid 0}}_+ + z} \in {}^n_4\mathbb{R}_n^\Omega \Leftrightarrow z \frac{0 \mid \mathcal{J}}{-\mathcal{J} \mid 0} = \overbrace{z \frac{0 \mid \mathcal{J}}{-\mathcal{J} \mid 0}}^+ \in {}^n_4\mathbb{R}_n^\Psi \Leftrightarrow z = \frac{A \mid B}{C \mid -\mathcal{J}^* A \mathcal{J}} \begin{cases} B \mathcal{J} = \overline{B \mathcal{J}}^* \\ C \mathcal{J} = \overline{C \mathcal{J}}^* \end{cases}$$

$$\begin{aligned}
& \underbrace{\frac{-1}{\begin{array}{c|cc} 0 & I \\ \hline I & 0 \end{array}}}_{+z} + z \underbrace{\frac{0}{\begin{array}{c|cc} I & \\ \hline I & 0 \end{array}}}_{-z} = \overline{g}^1 = \frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array} \stackrel{+}{g} \frac{\mathcal{J}}{0} \begin{array}{c|cc} -1 \\ -\mathcal{J} \end{array} = \frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array} \underbrace{\frac{0}{\begin{array}{c|cc} I \\ \hline I & 0 \end{array}}}_{+z} + \overline{z} \underbrace{\frac{-1}{\begin{array}{c|cc} 0 & I \\ \hline I & 0 \end{array}}}_{-\overline{z}} \stackrel{-1}{g} \frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array} \\
& = \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{+z} + \frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array} \stackrel{+}{z} \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{-\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array}} \stackrel{+}{z} \\
& \underbrace{\frac{0}{I} \begin{array}{c|cc} I \\ 0 \end{array}}_{-z} \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{-\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array}} \stackrel{+}{z} = \underbrace{\frac{0}{I} \begin{array}{c|cc} I \\ 0 \end{array}}_{+z} \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{+\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array}} \stackrel{+}{z} \\
& z \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{-\frac{\mathcal{J}}{I} \begin{array}{c|cc} 0 \\ 0 \end{array}} = - \underbrace{\frac{0}{I} \begin{array}{c|cc} I \\ 0 \end{array}}_{-\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ -\mathcal{J} \end{array}} \stackrel{+}{z} = \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{z \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{-\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ 0 \end{array}}} \stackrel{+}{z} = z \underbrace{\frac{0}{-\mathcal{J}} \begin{array}{c|cc} \mathcal{J} \\ 0 \end{array}}_{-\frac{\mathcal{J}}{0} \begin{array}{c|cc} 0 \\ 0 \end{array}}
\end{aligned}$$

$$\left| \begin{array}{c|cc} 0 & I \\ \hline I & 0 \end{array} \right| z = -z \left| \begin{array}{c|cc} 0 & I \\ \hline I & 0 \end{array} \right| \Leftrightarrow z = \left| \begin{array}{c|cc} A & B \\ \hline -B & -A \end{array} \right| \begin{cases} A\mathcal{J} = \overline{\overline{A}\mathcal{J}}^* \\ B\mathcal{J} = \overline{\overline{B}\mathcal{J}}^* \end{cases}$$

$$\begin{array}{c|c} \frac{n}{2}\mathbb{R}_n^{\Omega} \ni B J \asymp \begin{array}{c|c} 0 & B \\ \hline -B & 0 \end{array} & \xrightarrow{\hspace{10cm}} \begin{array}{c|c|c} \frac{n}{2}\mathbb{R}_n^{\Omega} & \begin{array}{c|c} \overbrace{I+B}^{-1} & \underbrace{I-B}_{0} \\ \hline & 0 \end{array} & 0 \\ \frac{n}{2}\mathbb{R}_n^{\Omega} & & \begin{array}{c|c} \overbrace{I-B}^{-1} & \underbrace{I+B}_{0} \end{array} \end{array} \end{array}$$

$$\overset{n}{\underset{4}{\mathbb{R}_n}} \xrightarrow{\hspace{1cm}} \overset{n}{\underset{4}{\mathbb{R}_n}}^{\Omega}$$

$$\begin{array}{c} {}^n\mathbb{R}^{\mathbb{U}}_2 \ni A \mathcal{J} \asymp \left. \begin{array}{c} A \\ 0 \end{array} \right| \begin{array}{c} 0 \\ -A \end{array} \end{array} \longrightarrow \begin{array}{c} {}^n\mathbb{C}^{\Omega}_n \\ \mathbb{R}^2 \\ {}^n\mathbb{R}^{\Omega}_2 \end{array}$$