

$$\Omega_{2n}^{\mathbb{R}} = KAN$$

$$K = \frac{\begin{array}{c|c} A & -B \\ \hline B & A \end{array}}{A + iB \in \mathcal{U}_n^{\mathbb{C}}}$$

$$N = \frac{\begin{array}{c|c} 1 & X \\ \hline 0 & 1 \end{array}}{X = X^{\dagger}}$$

$$A = \frac{\begin{array}{c|c} \Lambda & 0 \\ \hline 0 & \Lambda^{-1} \end{array}}{\Lambda = \text{diag} (\lambda_1 \cdots \lambda_n) \in \mathbb{R}_{>}^n}$$