

$$\left\{ \begin{array}{l} \Gamma_0 \nabla \Gamma \times K \subset \Gamma_0 \nabla \Gamma \times K \\ \mathbb{U}^m_{m+k} \subset \mathbb{O}^m_{m+k} \end{array} \right. \xrightarrow[g_e]{\begin{array}{c|cc} 1 & 1 & 0 \\ \times -1 & 0 & 0 \\ 1 & 0 & \sqrt{2} \end{array} / \sqrt{2}} \left\{ \begin{array}{l} \Gamma_0 \nabla \Gamma \times K \supset \Gamma_0 \nabla \Gamma \times K \\ \mathbb{O}^m_{m+k} \supset \mathbb{U}^m_{m+k} \end{array} \right.$$

$$\mathbf{\Gamma} = \begin{array}{c|cc} 0 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 0 \end{array} \in \mathbb{W} | \Gamma \times \Gamma \times K \Rightarrow \text{int } \mathbf{\Gamma} = \underline{e + \mathbf{\nabla} \mathbf{\check{e}} \mathbf{\nabla}} \partial_{\mathbf{\nabla}} = \underline{e + u^2} \partial_u + uv \partial_v$$

$$\mathbf{\Gamma}^3 = -\mathbf{\Gamma} \Rightarrow \exp(t\mathbf{\Gamma}) = \begin{array}{c|cc} t\mathbf{c} & t\mathbf{s} & 0 \\ -t\mathbf{s} & 0 & 0 \\ t\mathbf{c} & 0 & 1 \end{array} \in \mathbb{U} | \Gamma \times \Gamma \times K$$

$$g_e = \exp\left(\frac{\pi}{4}\mathbf{\Gamma}\right) \Rightarrow {}^{u:v}g_{\varkappa e} = \overline{1-\varkappa u} \, \underbrace{\varkappa + u}_{\sqrt{2}} \overline{1-\varkappa u} \, v$$

$$\left\{ \begin{array}{l} \Gamma \times H_0 \nabla \Gamma \times K \subset \Gamma \times H_0 \nabla \Gamma \times K \\ \mathbb{U}^{m+\ell}_{m+k} \subset \mathbb{O}^{m+\ell}_{m+k} \end{array} \right. \xrightarrow[g_e]{\begin{array}{c|cc} 1 & 0 & \varkappa & 0 \\ 0 & \sqrt{2} & 0 & 0 \\ -\varkappa & 0 & 1 & 0 \\ 0 & 0 & 0 & \sqrt{2} \end{array} / \sqrt{2}} \left\{ \begin{array}{l} \Gamma \times H_0 \nabla \Gamma \times K \supset \Gamma \times H_0 \nabla \Gamma \times K \\ \mathbb{O}^{m+\ell}_{m+k} \supset \mathbb{U}^{m+\ell}_{m+k} \end{array} \right.$$

$$\mathbf{\Gamma} = \begin{array}{c|cc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{array} \in \mathbb{W} | \Gamma \times H \times \Gamma \times K \Rightarrow \text{int } \mathbf{\Gamma} = \underline{e + \mathbf{\nabla} \mathbf{\check{e}} \mathbf{\nabla}} \partial_{\mathbf{\nabla}} = \left. \frac{e + u^2}{\vee u} \right| \frac{uv}{\vee v} \partial_{\mathbf{\nabla}}$$

$$\mathbf{\Gamma}^3 = -\mathbf{\Gamma} \Rightarrow \exp(\mathbf{\Gamma}) = \begin{array}{c|cc} t\mathbf{c} & 0 & t\mathbf{s} & 0 \\ 0 & 1 & 0 & 0 \\ -t\mathbf{s} & 0 & t\mathbf{c} & 0 \\ 0 & 0 & 0 & 1 \end{array} \in \mathbb{U} | \Gamma \times H \times \Gamma \times K$$

$$g_{\varkappa e} = \exp\left(\frac{\varkappa\pi}{4}\mathbf{\Gamma}\right) \Rightarrow \left. \frac{u}{\vee} \right| \frac{v}{w} \, g_{\varkappa e} = \left. \frac{(1-\varkappa u)^{-1} \varkappa + u}{\sqrt{2} \vee (1-\varkappa u)^{-1}} \right| \frac{\sqrt{2}(1-\varkappa u)^{-1} v}{\sqrt{2} \vee (1-\varkappa u)^{-1} v + w}$$

$$j_e = g_e^{-1} j_0 g_e$$

$$\left\{ \begin{array}{l} K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \subset K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \\ K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \subset K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \end{array} \right. \xrightarrow{g_{\varkappa e}} \left\{ \begin{array}{l} K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \supset K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \\ K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \supset K^2 \times H \overset{\vartheta}{\underset{\mathbb{K}_{2m+k}}{\times}} K^2 \times H \end{array} \right.$$

$$\times \frac{1}{\sqrt{2}} \begin{array}{ccc|ccc} 1 & 0 & 0 & 0 & \varkappa & 0 \\ 0 & 1 & 0 & -\varkappa & 0 & 0 \\ 0 & 0 & \sqrt{2} & 0 & 0 & 0 \\ \hline 0 & \varkappa & 0 & 1 & 0 & 0 \\ -\varkappa & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & \sqrt{2} \end{array}$$

$$\mathsf{J} = \frac{\begin{array}{ccc|ccc} 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ \hline 0 & 1 & 0 & 0 & 0 & 0 \\ -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{array}}{\in \mathfrak{U} \cap \mathfrak{D} | K^2 \times H \times K^2 \times H}$$

$$\Rightarrow \mathsf{J}^3 = -\mathsf{J} \Rightarrow \exp(\mathsf{J}) = \frac{\begin{array}{ccc|ccc} {}^t\mathfrak{c} & 0 & 0 & 0 & {}^t\mathfrak{s} & 0 \\ 0 & {}^t\mathfrak{c} & 0 & -{}^t\mathfrak{s} & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ \hline 0 & {}^t\mathfrak{s} & 0 & {}^t\mathfrak{c} & 0 & 0 \\ -{}^t\mathfrak{s} & 0 & 0 & 0 & {}^t\mathfrak{c} & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{array}}{\in \mathfrak{U} \cap \mathfrak{D} | K^2 \times H \times K^2 \times H}$$

$$g_{\varkappa e} = \exp\left(\frac{\varkappa\pi}{4}\mathsf{J}\right) \Rightarrow$$

$$\begin{bmatrix} a & b & v \\ -\overset{+}{b} & d & y \\ -\overset{+}{v} & -\overset{+}{y} & w \end{bmatrix} g_{\varkappa e} = \frac{\begin{array}{ccc|ccc} 1-\varkappa b & \overset{-1}{\varkappa a} & a & b+\varkappa & & \\ -\varkappa d & 1-\varkappa \overset{+}{b} & -\varkappa-\overset{+}{b} & d & & \end{array}}{-\sqrt{2} \begin{bmatrix} \overset{+}{y} & -\overset{+}{v} \end{bmatrix} \frac{\begin{array}{ccc|ccc} 1-\varkappa b & \overset{-1}{\varkappa a} & & & & \\ -\varkappa d & 1-\varkappa \overset{+}{b} & & & & \end{array}}{\begin{array}{ccc|ccc} 1-\varkappa b & \overset{-1}{\varkappa a} & & & & \\ -\varkappa d & 1-\varkappa \overset{+}{b} & & & & \end{array}}} \frac{\begin{array}{ccc|ccc} \sqrt{2} & 1-\varkappa b & \overset{-1}{\varkappa a} & \overset{+}{v} & & \\ -\varkappa d & 1-\varkappa \overset{+}{b} & & y & & \end{array}}{\begin{array}{ccc|ccc} w-\varkappa \begin{bmatrix} \overset{+}{y} & -\overset{+}{v} \end{bmatrix} & \frac{\begin{array}{ccc|ccc} 1-\varkappa b & \overset{-1}{\varkappa a} & & & & \\ -\varkappa d & 1-\varkappa \overset{+}{b} & & & & \end{array}}{\begin{array}{ccc|ccc} 1-\varkappa b & \overset{-1}{\varkappa a} & & & & \end{array}}} \begin{bmatrix} v \\ y \end{bmatrix}$$

$$\frac{1}{1} \Big| \frac{-1}{1} \; g_e \frac{1}{-1} \Big| \frac{1}{1} = \frac{i}{1} \Big| \frac{-i}{1} \; g_e \frac{-i}{i} \Big| \frac{1}{1} = \frac{\begin{array}{ccc|ccc} 1 & -1 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & \sqrt{2} & 0 & 0 & 0 \\ \hline 0 & 0 & 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & -1 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & \sqrt{2} \end{array}}{\sqrt{2}} \in {}^n\mathbb{R}_n^{\mathfrak{U}} \times {}^n\mathbb{R}_n^{\mathfrak{U}}$$

$$j_e = g_e^{-1} j_0 g_e$$