

$$\underline{\mathbf{t}}_{-w}^* = {}_K G_w^{-1/2}$$

$$\underline{\mathbf{g}}_w = \underline{\mathbf{t}}_w^* {}_K G_w^{1/2} \underline{\mathbf{t}}_w = \underline{\mathbf{t}}_w^* {}_K G_w^{1/2} = {}_K G_{-w}^{-1} {}_K G_w^{1/2}$$

$$G^C \ni g = \underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_{0\dot{g}^*}^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_{zg}$$

$$g = \underline{\mathbf{t}}_u \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w$$

$${}^z \underline{\mathbf{g}} = \underline{\mathbf{t}}_u \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w = {}^{z+u} \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} = {}^{z+u} {}_K G_b^{-1} {}^z \underline{\mathbf{g}} \Rightarrow {}^{z+u} {}_K G_v = I \Rightarrow u = -z \Rightarrow g = \underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w$$

$${}^z \underline{\mathbf{g}} = z \underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w = 0 \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w = 0 {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_w = 0 \underline{\mathbf{t}}_w = w \Rightarrow g = \underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_{zg}$$

$$0 \dot{g}^* = 0 \overbrace{\underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_v^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_{zg}}^* = 0 \underline{\mathbf{t}}_{zg}^* {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_v \underline{\mathbf{t}}_{-z}^* = 0 {}^z \underline{\mathbf{g}} \underline{\mathbf{t}}_v \underline{\mathbf{t}}_{-z}^* = 0 \underline{\mathbf{t}}_v \underline{\mathbf{t}}_{-z}^* = b \underline{\mathbf{t}}_{-z}^* \Rightarrow v = 0 \dot{g}^* \underline{\mathbf{t}}_z^* = 0 \dot{g}^{*-z}$$

$$G \ni g = \underline{\mathbf{t}}_{-w}^* \underline{\mathbf{t}}_{0\dot{g}^*}^* {}^w \underline{\mathbf{g}}^{-1} \underline{\mathbf{t}}_{wg}^*$$

$$\dot{g}^{*-1} = JgJ = J \underline{\mathbf{t}}_{-w} \underline{\mathbf{t}}_{0\dot{g}^*}^* {}^w \underline{\mathbf{g}} \underline{\mathbf{t}}_{wg} J = J \underline{\mathbf{t}}_{-w} J J \underline{\mathbf{t}}_{0\dot{g}^*}^* J J {}^w \underline{\mathbf{g}} J J \underline{\mathbf{t}}_{wg} J = \underline{\mathbf{t}}_w \underline{\mathbf{t}}_{-0\dot{g}^*}^* {}^w \underline{\mathbf{g}} \underline{\mathbf{t}}_{-wg}$$

$$\Rightarrow g^{-1} = \underline{\mathbf{t}}_{-wg}^* {}^w \underline{\mathbf{g}} \underline{\mathbf{t}}_{-0\dot{g}^*}^* \underline{\mathbf{t}}_w^* \Rightarrow g = \underline{\mathbf{t}}_{-w}^* \underline{\mathbf{t}}_{0\dot{g}^*}^* {}^w \underline{\mathbf{g}}^{-1} \underline{\mathbf{t}}_{wg}^*$$

$${}^z G_w = \underline{\mathbf{t}}_{zw} \underline{\mathbf{t}}_w^* \underline{\mathbf{t}}_{-z} \underline{\mathbf{t}}_{-wz}^* = \underline{\mathbf{t}}_{-zw} \underline{\mathbf{t}}_{-w}^* \underline{\mathbf{t}}_z \underline{\mathbf{t}}_{wz}^*$$

$$\underline{\mathbf{t}}_z \underline{\mathbf{t}}_{-w}^* = \underline{\mathbf{t}}_{-wz}^* {}^z G_w^{-1} \underline{\mathbf{t}}_{zw}$$

$$h^{-1} \underline{\mathbf{t}}_z h = \underline{\mathbf{t}}_{zh}$$

$${}^z G_w^{1/2} \underline{\mathbf{t}}_z {}^z G_w^{-1/2} = \underline{\mathbf{t}}_{z {}^z G_w^{-1/2}} = \underline{\mathbf{t}}_{zw}$$

$$\begin{aligned}
& {}^z G_w^- \mathfrak{t}_w^* {}^z G_w^{1/2} = \mathfrak{t}_{wz}^* \\
\mathfrak{g}_w &= \mathfrak{t}_w^* {}^w G_w^{1/2} \mathfrak{t}_w = \mathfrak{t}_w^* \mathfrak{t}_{w^w} {}^w G_w^{1/2} = {}^w G_w^{1/2} \mathfrak{t}_{w^w}^* \mathfrak{t}_w \\
& \mathfrak{u}_w = \mathfrak{t}_{-w}^* {}^w G_{-w}^{1/2} \mathfrak{t}_w
\end{aligned}$$