

$$Z \int_{\omega} D \times G \xrightarrow[\text{unit}]{\times} Z \int_{\omega} D$$

$$\underbrace{\mathfrak{b} \times g}_{wg} = \mathfrak{b}_w \underline{w} g$$

$$\mathfrak{b} \times \mathfrak{t} = \int_{dw}^D \mathfrak{b}_w \times \mathfrak{t}_w = \int_{dw}^D \underbrace{\mathfrak{b}_w \underline{w} \mathcal{D}_w^{-1}} \times \mathfrak{t}_w$$

$$\underbrace{\mathfrak{b} \times g} \times \underbrace{\mathfrak{t} \times g} = \mathfrak{b} \times \mathfrak{t}$$

$$\begin{aligned} \int_{dw}^D \underbrace{\mathfrak{b} \times g}_w \underline{w} \mathcal{D}_w^{-1} \times \underbrace{\mathfrak{t} \times g}_w &= \int_{dw}^D \underbrace{\mathfrak{b} \times g}_{wg} \underline{wg} \mathcal{D}_{wg}^{-1} \times \underbrace{\mathfrak{t} \times g}_{wg} = \int_{dw}^D \underbrace{\mathfrak{b}_w \underline{w} g}_{wg} \underline{wg} \mathcal{D}_{wg}^{-1} \times \underbrace{\mathfrak{t}_w \underline{w} g}_{wg} \\ &= \int_{dw}^D \underbrace{\mathfrak{b}_w \underline{w} g}_{wg} \underline{wg} \mathcal{D}_{wg}^{-1} \underline{w} \underline{g} \times \mathfrak{t}_w = \int_{dw}^D \underbrace{\mathfrak{b}_w \underline{w} \underline{g}^{-1} \underline{wg} \mathcal{D}_{wg} \underline{w} \underline{g}^{-1}}^{-1} \times \mathfrak{t}_w = \int_{dw}^D \underbrace{\mathfrak{b}_w \underline{w} \mathcal{D}_w^{-1}} \times \mathfrak{t}_w \end{aligned}$$