

$$\mathbb{U}_{\pm} \mathbb{R} \overline{\mathbb{N}} \mathbb{L} \xrightarrow{\text{Int}} \mathcal{O} | \mathbb{L}$$

$$\mathbb{U}_{\pm} \mathbb{R} \overline{\mathbb{N}} \mathbb{L} \xrightarrow{\text{Int}} \mathcal{O} | \mathbb{L}$$

$$\mathbb{U}_{\pm} \mathbb{R} \overline{\mathbb{N}} \mathbb{L} = \frac{\mathbb{L} \ddot{\times}_k \mathbb{L}}{\mathbb{L} \times \mathbb{L} = \pm 1} \sqsubset \underbrace{\mathbb{R} \overline{\mathbb{N}} \mathbb{L}}_{\mathbb{C}}$$

$$g = \mathbb{L} \ddot{\times}_k \mathbb{L} \Rightarrow N(g) = g \times g^t \in \mathbb{R} \setminus 0$$

$$g \times g^t = \mathbb{L} \times \dots \times \mathbb{L} \times \mathbb{L} \times \mathbb{L} \ddot{\times}_k \mathbb{L} = \mathbb{L} \times \mathbb{L} \dots \mathbb{L} \times \mathbb{L} \neq 0$$

$$N(g \times g) = N(g) N(g)$$

$$N(gg) = g \dot{g} \widehat{gg}^t = g \underbrace{(\dot{g} \dot{g}^t)}_{\in \mathbb{R}} g^t = \underbrace{gg^t}_{\in \mathbb{R}} \underbrace{\dot{g} \dot{g}^t}_{\in \mathbb{R}} = N(g) N(g)$$

$$\mathbb{U}_{\pm} \mathbb{R} \overline{\mathbb{N}} \mathbb{L} = \frac{g \in \underbrace{\mathbb{R} \overline{\mathbb{N}} \mathbb{L}}_{\mathbb{C}}}{g \times g^t = \pm 1}$$