

$$\begin{array}{ccc}
 \mathbb{1} \in \mathcal{L}_+^\uparrow & \xrightarrow{P} & \mathcal{L}_-^\uparrow \ni P \\
 \downarrow T & \searrow \text{PT} & \downarrow T \\
 T \in \mathcal{L}_-^\downarrow & \xrightarrow{P} & \mathcal{L}_+^\downarrow \ni -\mathbb{1}
 \end{array}$$

$$\begin{array}{ccc} \mathrm{SO}(3; 1)^+ & \xrightarrow{\quad \Pi \quad} & \mathrm{GL}(V) \\ \uparrow \mathrm{exp} & & \uparrow \mathrm{exp} \\ \mathfrak{so}(3; 1) & \xrightarrow{\quad \pi \quad} & \mathfrak{gl}(V) \end{array}$$

