

$$g \bowtie v \in V \rightarrow G \bowtie V \ni g:v$$

$$T^\sharp V \rtimes G \xrightarrow{\text{plex}} T^\sharp V$$

$$v:\ell \bowtie g = \underbrace{\bar{g}^{-1} \bowtie v}_{\ell \bowtie g}$$

$$T^\sharp V \xrightarrow[\text{mom}]{\Phi} {}^+ \mathfrak{g}$$

$${}_{v:\ell} \Phi \gamma = \ell \underline{\gamma \bowtie v}$$

$$\begin{array}{ccccc} T^\sharp V & \xrightarrow{\tau} & V & \xrightarrow{\gamma} & \mathbb{R} \\ & \searrow & \curvearrowleft_{\tau \bowtie \gamma} & \nearrow & \\ & & & & \\ & & \underline{\tau \bowtie \gamma} * \underline{\tau \bowtie \gamma} = 0 & & \end{array}$$

$$\begin{array}{ccccccc} P & & {}^+ \mathfrak{g} & & & & \\ \uparrow \Phi & & \uparrow \Phi & & & & \\ \Phi P & \xrightarrow{\iota} & T^\sharp V & \xrightarrow{\tau} & V & & \\ \downarrow \pi & & \searrow \iota \bowtie \tau \bowtie \gamma & \swarrow \tau \bowtie \gamma_{G \text{ inv}} & \downarrow \gamma & & \\ \overline{\Phi P} & \xrightarrow{\overline{\tau \bowtie \gamma}} & & & & & \end{array}$$

$$\begin{cases} \pi \times \overline{\tau \times \gamma} = \iota \times \underline{\tau \times \gamma} \\ \pi \times \overline{\tau \times \delta} = \iota \times \underline{\tau \times \delta} \end{cases} \Rightarrow \pi \times \underline{\tau \times \gamma} \times \overline{\tau \times \delta} = \iota \times \underline{\tau \times \gamma} \times \overline{\tau \times \delta} = 0$$

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