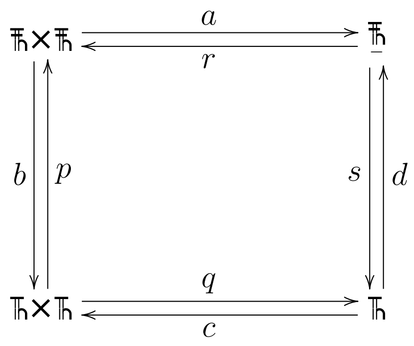


$$\hbar \in \mathbb{K}\triangle_{\omega}$$

$$\mathbb{K}\triangle_{\omega} \ni \mathbb{h} \supset \hbar \Longrightarrow \mathbb{h} \xrightarrow[\mathbb{K}\text{ ana}]{\pi} \hbar\neg\mathbb{h} \in \mathbb{K}\triangle_{\omega} \text{ Mgf treu}$$

$$\dot{U} \subsetneq \hbar\neg\mathbb{h} \Leftrightarrow \overset{-1}{\pi}\left(\dot{U}\right) \subsetneq \mathbb{h} \Longrightarrow \pi \text{ off}$$

$$\triangle_{0} \ni \hbar\neg\mathbb{h} \text{ treu}$$

$$\underline{\mathbb{h}} = \underline{\hbar}\times\daleth$$

$$\hbar\times\daleth \ni h{:}\flat \xrightarrow[\text{ana}]{\wr} h^{\flat}\mathfrak{e} \in \mathbb{h}{:}\Vdash{:}\flat \in \underline{\hbar}\times\daleth \xrightarrow[\exists]{{}^{e:0}\underline{\wr}} \underline{\mathbb{h}} \ni \Vdash + \flat$$

$$\bigvee\begin{cases}\underline{\hbar} \supset W \ni 0\\ \daleth \supset Y \ni 0\end{cases} \quad {}^{W}\mathfrak{e}\times Y \xrightarrow[\text{biana}]{\wr} U = {}^{W}\mathfrak{e}\,{}^{Y}\mathfrak{e} : = U \subsetneq \mathbb{h}$$

$$\hbar \text{ Lie grp in rel-Top} \underset{\text{OE}}{\Longrightarrow} \hbar \cap U = {}^{W}\mathfrak{e} \Longrightarrow \begin{cases}\bigvee 0 \in V \subsetneq Y\\ {}^{-V}\mathfrak{e}^{V}\mathfrak{e} \subset U\end{cases}$$

$$\bar{\mathfrak{h}} \times V \xrightarrow[\text{biana}]{\sim} U = \bar{\mathfrak{h}}\,^{V}\mathfrak{e} \subseteq \mathbb{h}$$

$$\sim \ \text{inj}$$

$$\dot{h} \in \bar{\mathfrak{h}}$$

$$\dot{\flat} \in V$$

$$h^{\flat}\mathfrak{e} = \acute{h}\,^{\acute{\flat}}\mathfrak{e} \Rightarrow {}^{\flat}\mathfrak{e}\,^{-\acute{\flat}}\mathfrak{e} = h^{-1}\,\acute{h} \in \bar{\mathfrak{h}} \cap U = {}^{W}\mathfrak{e}$$

$$\Rightarrow \bigvee_{\flat''}^{W} {}^{\flat}\mathfrak{e}\,^{-\acute{\flat}}\mathfrak{e} = {}^{-\flat''}\mathfrak{e} \Rightarrow {}^{e:\flat}\sim = {}^{\flat}\mathfrak{e} = {}^{\flat''}\mathfrak{e}\,^{\acute{\flat}}\mathfrak{e} = {}^{\flat''\mathfrak{e}:\acute{\flat}}\sim \Rightarrow \flat = \acute{\flat} \Rightarrow h = \acute{h}$$

$$\bar{\mathfrak{h}}\,^{V}\mathfrak{e} = \bigcup_{h \in \bar{\mathfrak{h}}} h\,^{\flat}\mathfrak{e}\,^{V}L = \bigcup_{h \in \bar{\mathfrak{h}}} h\underbrace{{}^{W}\mathfrak{e} \times V|\sim} \subseteq \mathbb{h}$$

$$\bar{\mathfrak{h}} \times V \xrightarrow[\text{lic biana}]{\sim} \mathbb{h} \bigwedge_{h \in \bar{\mathfrak{h}}} h\,^{W}\mathfrak{e} \subseteq \bar{\mathfrak{h}}$$

$$\begin{array}{ccc} {}^{W}\mathfrak{e} \times V & \underset{\text{biana}}{\overset{\sim}{\rightleftarrows}} & {}^{W}\mathfrak{e}\,^{V}\mathfrak{e} \\ \Big\downarrow L_{h} \times \mathfrak{i} & & \Big\downarrow L_{h} \\ {}^{W}\mathfrak{e} \times V & \underset{\text{bian}}{\overset{\sim}{\rightleftarrows}} & h\,^{W}\mathfrak{e}\,^{V}\mathfrak{e} \end{array}$$

$$\bigwedge_{g}^{\mathbb{h}} V \xrightarrow[\text{bij}]{\overset{g}{\phi}} \mathbb{h} \times {}^{V}\mathfrak{e}\, g \subset \mathbb{h} \neg \mathbb{h}$$

$$b \mapsto \mathbb{h} \times {}^{b}\mathfrak{e}\, g$$

$$\overset{g}{\phi} \text{ inj } \dot{b} \in V$$

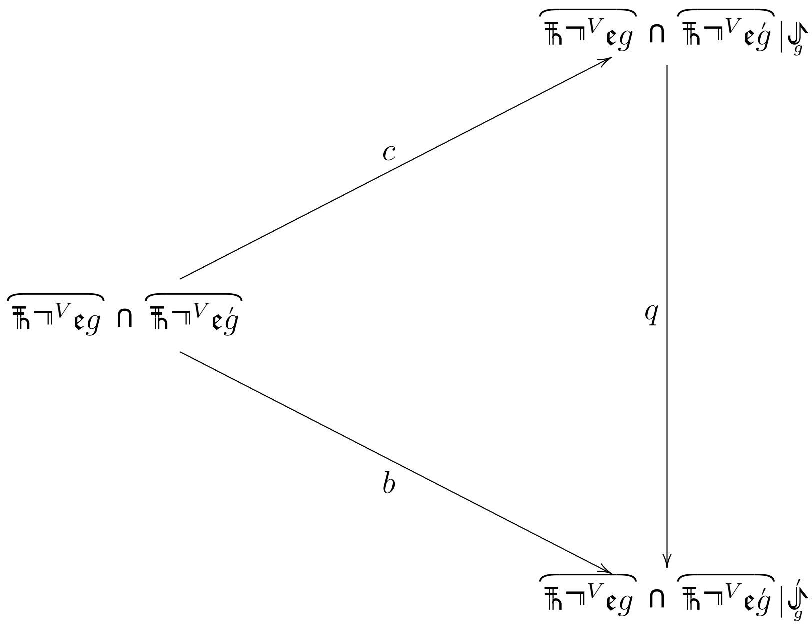
$$\mathbb{h} \times {}^{b}\mathfrak{e}\, g = \mathbb{h} \times {}^{b'}\mathfrak{e}\, g \Rightarrow \mathbb{h} \ni {}^{b}\mathfrak{e}\, g \left({}^{b'}\mathfrak{e} g\right)(-1) = {}^{b}\mathfrak{e}\, {}^{-b'}\mathfrak{e} \in U$$

$$\Rightarrow \bigvee_{b'' \in W} {}^{b''}\mathfrak{e} = {}^{b}\mathfrak{e}\, {}^{-b'}\mathfrak{e} \Rightarrow {}^{e:b}\wr = {}^{b}\mathfrak{e} = {}^{b''}\mathfrak{e}\, {}^{b'}\mathfrak{e} = {}^{b''\mathfrak{e}:b'}\wr \Rightarrow b = b''$$

$$\overset{-1}{\pi}\, \pi\left({}^{V}\mathfrak{e} g\right) = \mathbb{h}\, \underbrace{{}^{V}\mathfrak{e} g} = \underbrace{\mathbb{h}^{V}\mathfrak{e}} g \subset \mathbb{h}$$

$$V \xleftarrow[\exists]{\psi_g := \overset{g}{\phi}^{-1}} \pi\left({}^{V}\mathfrak{e} g\right)$$

$$g \in \mathbb{h} \text{ Atlas on } \mathbb{h} \neg \mathbb{h}$$



$$\mathbb{h} \times {}^{b}\mathfrak{e}\, g = {}^{b}\overset{g}{\phi} = {}^{b'}\overset{\acute{g}}{\phi} = \mathbb{h} \times {}^{b'}\mathfrak{e}\, \acute{g} \Rightarrow \bigvee_{h \in \mathbb{h}} {}^{b'}\mathfrak{e}\, \acute{g} = h\, {}^{b}\mathfrak{e}\, g$$

$$\Longrightarrow h^{-1}\, {}^{\flat'}\mathfrak{e} = {}^{\flat}\mathfrak{e}\, g\, \acute{g}^{-1} \in \bar{\mathbb{h}} \times {}^{V}\mathfrak{e} \Longrightarrow \flat' = \pi_V \left({}^{\flat}\mathfrak{e} g \acute{g}^{-1} | \mathit{\Omega}^{-1} \right) \xleftarrow[\text{ana}]{} \flat$$

$$\underbrace{\bar{\mathbb{h}} \urcorner \mathbb{h}} \times \mathbb{h} \xrightarrow[\text{ana}]{} \bar{\mathbb{h}} \urcorner \mathbb{h}$$