

$$M\subset \underline{M}$$

$$\underline{M}\underset{K}{\times}G\ni \dot{x}:g=\dot{x}\,{}^og$$

$$\widetilde{\mathfrak{b}}_g = \mathfrak{b}_{og}\, {}^o\underline{g}^{-1}$$

$$\mathfrak{b}_x = \widetilde{\mathfrak{b}}_{\gamma_x}\, {}^o\underline{\gamma_x}^{-1}$$

$$\underline{M}_x\ni \mathfrak{b}_x = \widetilde{\mathfrak{b}}_{\gamma_x}\, {}^o\underline{\gamma_x}^{-1} = \mathfrak{b}_x\in \underline{M}$$

$$\mathfrak{b}_x\,\mathop{\boxtimes}\limits_x\mathfrak{b}_x = \widetilde{\mathfrak{b}}_{\gamma_x}\,\mathop{\boxtimes}\limits\widetilde{\mathfrak{b}}_{\gamma_x}$$

$$\underline{M}\underset{K}{\times}G = \begin{cases} \flat:g\sim \flat k^{-1}:kg \\ \flat\in Z:g\in G \end{cases}$$

$$\begin{array}{ccc}
G & \xrightarrow{\tilde{\mathfrak{b}}} & \underline{M} \\
\downarrow K \dashv & \nearrow \mathfrak{b} & \downarrow \underline{o_g} \\
M & \xrightarrow{\mathfrak{b}} & \underline{M} \times_K G
\end{array}$$

$$\dot{x} : g = \dot{x} \circ \underline{o_g}$$

$$Z \ni \begin{cases} \tilde{\mathfrak{b}}_{\gamma_x} = \mathfrak{b}_x {}_{1/2}^x B_x \\ \tilde{\mathfrak{b}}_g = \mathfrak{b}_{og} {}^o g \end{cases} \implies \tilde{\mathfrak{b}}_{kg} = \mathfrak{b}_{okg} {}^o k g = {}^o k {}^{ok} g \mathfrak{b}_{og} = \mathfrak{b}_{og} {}^o g {}^o k = \tilde{\mathfrak{b}}_g {}^o k$$

$$Z \times (og) \ni \begin{cases} {}^{og} \underline{\mathfrak{b}} = {}^g \tilde{\mathfrak{b}} : g = {}^o g {}^{og} \mathfrak{b} : g \\ {}^x \underline{\mathfrak{b}} = {}^{\gamma_x} \tilde{\mathfrak{b}} : \gamma_x = {}_{1/2}^x B_x {}^x \mathfrak{b} : \gamma_x \end{cases}$$

$$\begin{array}{ccccc}
& & R_g \ltimes \tilde{\mathfrak{b}} & & \\
& \nearrow R_g & \downarrow & \searrow & \\
G & \xrightarrow{\quad} & G & \xrightarrow{\quad} & Z \\
\downarrow K \dashv & & \downarrow K \dashv & & \\
K \dashv G & \xrightarrow{g} & K \dashv G & \xrightarrow{\mathfrak{b}} & Z \times_K G \\
& \searrow & \nearrow & & \\
& g \ltimes \tilde{\mathfrak{b}} & & &
\end{array}$$

$$\mathfrak{b}_x \ltimes \mathfrak{b}_x = \tilde{\mathfrak{b}}_{\gamma_x} \ltimes \mathfrak{b}_{\gamma_x}$$

$$\widehat{\mathfrak{b} \nabla \dot{x}}_x = \mathfrak{b}_x \dot{x} - \widehat{\mathfrak{b}_x \dot{x} \dot{x}}$$

$$\widetilde{\mathfrak{b}}_g=\mathfrak{b}_{o\cdot g}\, {}^og^{-1}$$

$$\widetilde{\mathfrak{b}}_{\gamma_x}=\mathfrak{b}_x\, {}^o\!\underline{\gamma_x}^{-1}={\mathfrak{b}_x}^xB_x^{1/2}$$

$$\underline{D}_x\ni \mathfrak{b}_x=\widetilde{\mathfrak{b}}_{\gamma_x}\, {}^o\!\underline{\gamma_x}=\mathfrak{b}_x\Subset Z$$