

$$\underline{h} \boxtimes \underline{h} := \begin{cases} \underline{h} \times \underline{h} & \xleftarrow{\underline{h} = \underline{F} \underline{u} = \underline{F} \underline{r}} \underline{h} \\ \backslash \bowtie \underline{h} = / \end{cases} \in \mathbb{K} \triangleq \text{Lie}$$

$$\underline{h} \boxtimes \underline{h} \boxtimes \underline{h} \xrightarrow{*} \underline{h} \boxtimes \underline{h} \ni \underline{b} * \underline{b}' = - \underline{b}' * \underline{b}$$

$$\underline{b} * \underline{b}' * \underline{b}'' + \underline{b}' * \underline{b}'' * \underline{b} + \underline{b}'' * \underline{b} * \underline{b}' = 0$$

$$\underline{b} * \underline{\gamma b} = \underline{\gamma b} * \underline{b} + \underline{b} * \underline{\gamma b}$$

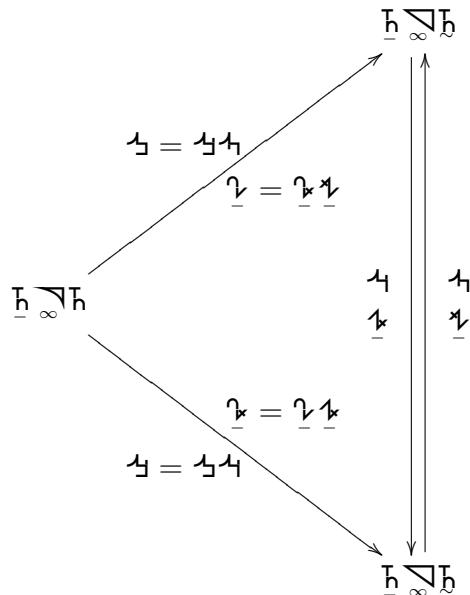
$$\underline{\gamma b} * \underline{b} = \underline{\gamma b} * \underline{b}' - \underline{b}' * \underline{\gamma b}$$

$$\underline{h} \boxtimes \underline{h} \xrightarrow{\underline{h} \boxtimes \underline{h} \text{ Mod}} \underline{h} \boxtimes \underline{h}$$

$$\underline{\gamma b}_h := {}^h \gamma b_h$$

$$\underline{\gamma b}_h 1 = {}^h \gamma \underline{b}_h 1 \text{ Der}$$

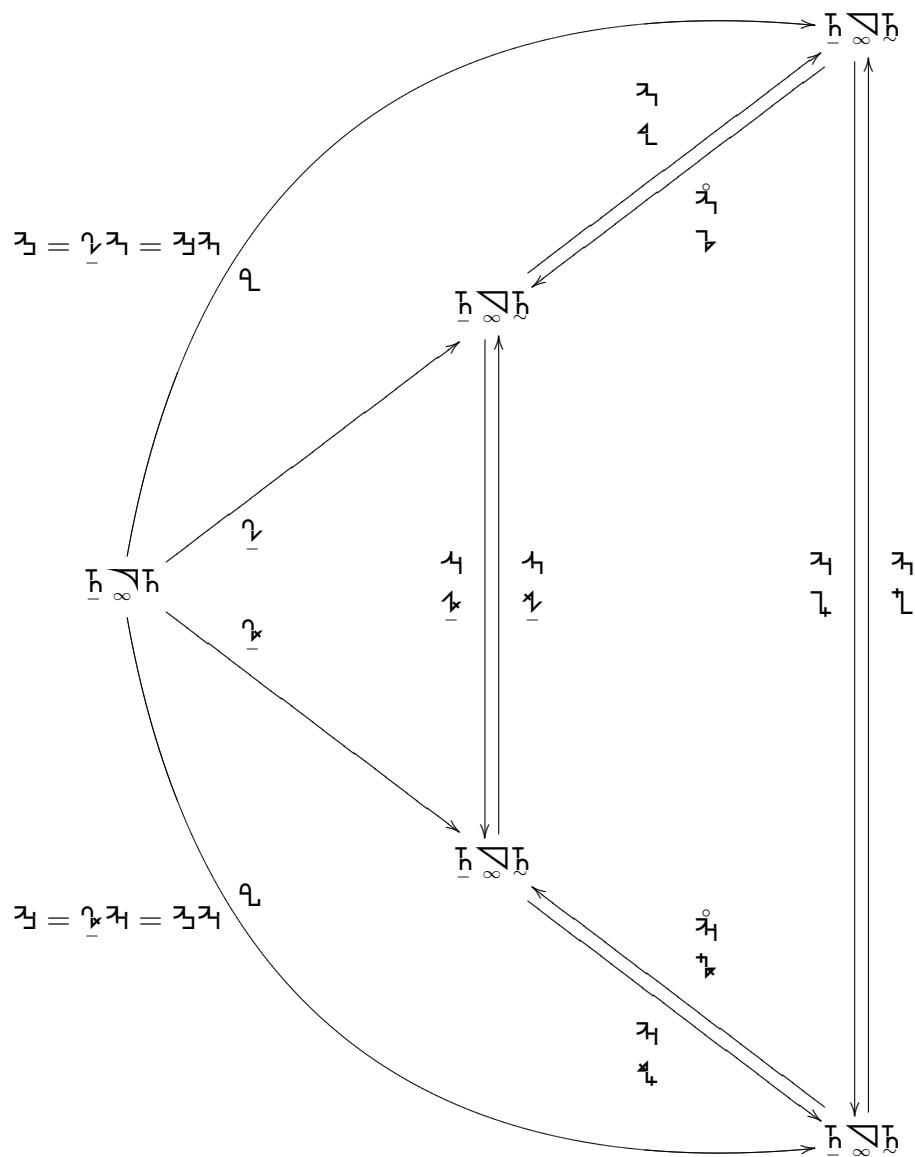
$$\underline{\gamma b} * \underline{\gamma} = \underline{\gamma b} * \underline{\gamma}$$



$$\underline{b} = \underline{b} \underline{\gamma} \underline{\gamma}$$

$$U: \nabla \text{ Karte } b_U = \sum_i b \bowtie \nabla^i \frac{\partial}{\partial \nabla^i} \underline{b} * \underline{b}_U = \sum_{ij} \underbrace{b \bowtie \nabla^i \frac{\partial}{\partial \nabla^i} b \bowtie \nabla^j \frac{\partial}{\partial \nabla^j} - b \bowtie \nabla^i \frac{\partial}{\partial \nabla^i} b \bowtie \nabla^j \frac{\partial}{\partial \nabla^j}}$$

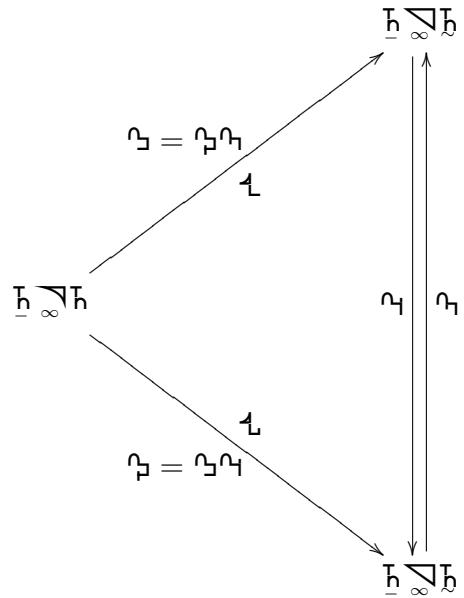
$$= \sum_j \underbrace{\sum_i b \star \gamma^i \frac{\partial b \star \gamma^j}{\partial \gamma^i}}_{b \star \gamma^i \frac{\partial b \star \gamma^j}{\partial \gamma^i}} - b \star \gamma^i \frac{\partial b \star \gamma^j}{\partial \gamma^i} \frac{\partial}{\partial \gamma^j}$$



$$\begin{cases} b \gamma_1 = \underline{b} \gamma_1 \\ b \gamma_2 = \underline{b} \gamma_2 \end{cases}$$

$$b \gamma_1 = \begin{cases} b \gamma_1 \\ b \gamma_2 \end{cases}$$

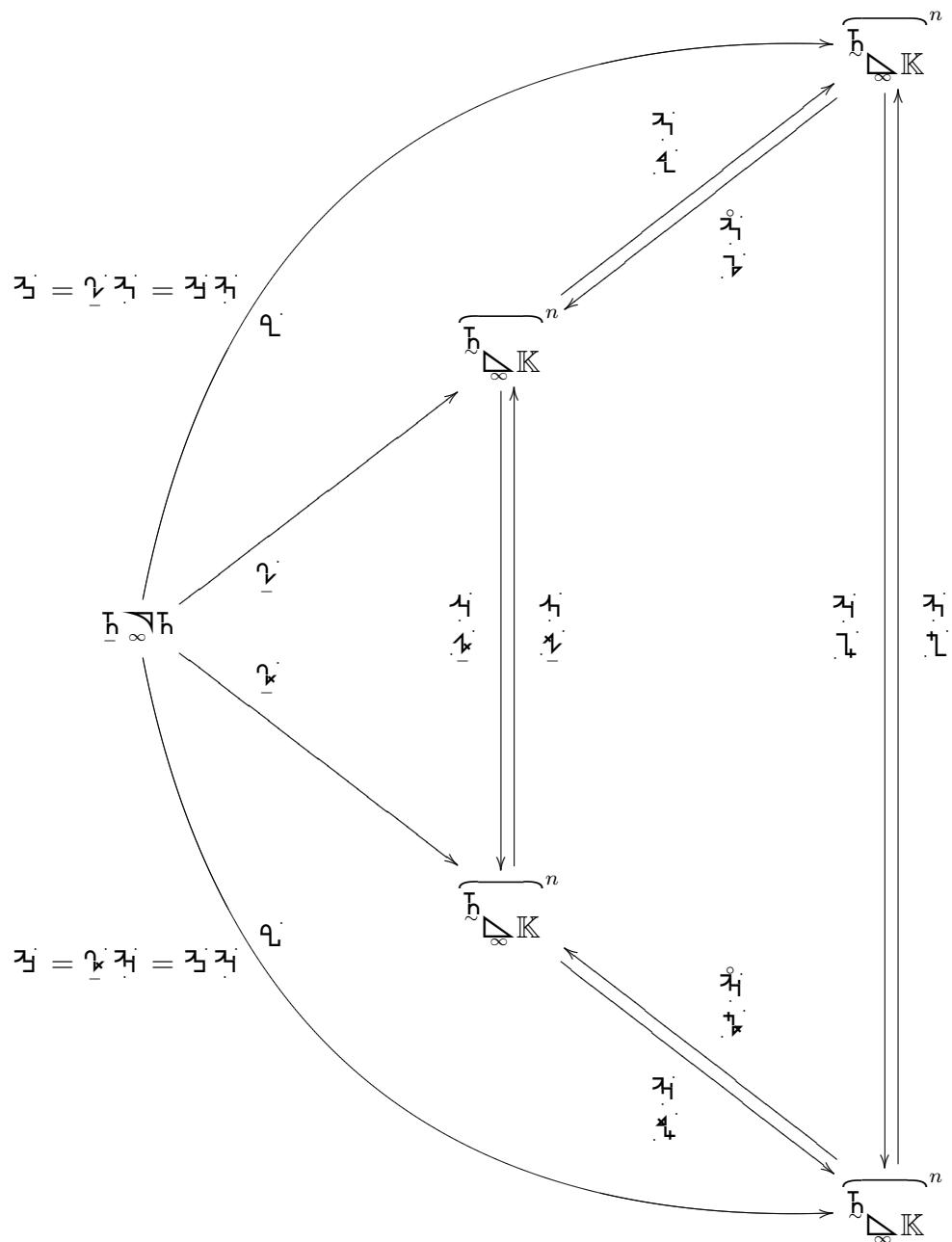
$$\mathbf{b} = \begin{cases} \underline{\mathbf{b}} & \text{if } \mathbf{b} \in \mathcal{B} \\ \underline{\mathbf{b}}^\perp & \text{if } \mathbf{b} \in \mathcal{B}^\perp \end{cases}$$



$$\begin{aligned}
U:\mathcal{V} \text{ Karte } \mathbf{b}_U &= \sum_i \mathbf{b} \times \mathcal{V}^i \frac{\partial}{\partial \mathcal{V}^i} \underbrace{\mathbf{b} \times \mathbf{b}_U}_{U} = \sum_{ij} \underbrace{\mathbf{b} \times \mathcal{V}^i \frac{\partial}{\partial \mathcal{V}^i} \mathbf{b} \times \mathcal{V}^j}_{\mathbf{b} \times \mathcal{V}^i} - \underbrace{\mathbf{b} \times \mathcal{V}^i \frac{\partial}{\partial \mathcal{V}^i} \mathbf{b} \times \mathcal{V}^j}_{\frac{\partial}{\partial \mathcal{V}^j}} \\
&= \sum_j \underbrace{\sum_i \mathbf{b} \times \mathcal{V}^i \frac{\partial \mathbf{b} \times \mathcal{V}^j}{\partial \mathcal{V}^i}}_{-\mathbf{b} \times \mathcal{V}^i \frac{\partial \mathbf{b} \times \mathcal{V}^j}{\partial \mathcal{V}^i}} \frac{\partial}{\partial \mathcal{V}^j}
\end{aligned}$$

$$\begin{array}{ccc}
& & \overbrace{\mathbb{K}}^n \\
& \nearrow \gamma = \gamma_1 \gamma_2 & \downarrow \gamma = \gamma_1 \gamma_2 \\
\mathbb{H}_\infty \setminus \mathbb{H} & & \gamma_1 \gamma_2 \\
& \searrow \gamma = \gamma_2 \gamma_1 & \uparrow \gamma = \gamma_2 \gamma_1 \\
& & \overbrace{\mathbb{K}}^n
\end{array}$$

$\mathbb{H} = \underbrace{\mathbb{H}_1 \mathbb{H}_2}_{\gamma}$



$$\begin{cases} \mathcal{H} &= \mathcal{L} \mathcal{K} \\ \mathcal{L} &= \mathcal{H} \mathcal{K} \end{cases}$$

$$\mathcal{L} = \begin{cases} \mathcal{H} \mathcal{K} \\ \mathcal{L} \mathcal{K} \end{cases}$$

$$\mathfrak{b} = \begin{cases} \underline{\mathfrak{b}_\infty} \mathfrak{x} \\ \underline{\mathfrak{b}_n} \mathfrak{e} \end{cases}$$

