

$$\mathbb{h}_{\triangleleft} \mathbb{K} \xleftarrow{\quad \mathbb{L} \quad} n \mathbb{K}$$

$$\mathbb{h}_{\triangleleft} \mathbb{K} \ni \mathbb{L}^j \quad \text{dual standard basis}$$

$$\mathbb{L}^i \star \mathbb{L}^j = \mathbb{L}^{*i} \mathring{\eta} \mathbb{L}^j = {}_i \mathbb{L} \mathring{\eta} \mathbb{L}^j = \eta^{ij}$$

$$\mathbb{A} = \mathbb{L} \underbrace{\mathbb{L} \mathbb{A}}: \quad {}_{\mu} \delta^{\nu} = {}_{\mu} \mathbb{L} \mathbb{L}^{\nu}$$

$$\mathbb{Y} = \mathbb{L} \underbrace{\mathbb{L} \mathbb{Y}}: \quad {}_i \delta^j = \mathbb{L}^{*i} \mathbb{L}^j = {}_i \mathbb{L} \mathbb{L}^j$$

$$\mathbb{L}^{*i} = {}_i \mathbb{L}$$

$$\begin{array}{ccc} \mathbb{h}_{\triangleleft} \mathbb{K} & \xleftarrow{\quad \mathbb{L} \quad} & n \mathbb{K} \\ \begin{array}{c} \mathring{h} \mathfrak{A} \\ \updownarrow \\ \mathfrak{A} \end{array} & \begin{array}{c} \mathring{h} \mathfrak{A} \\ \mathfrak{A} \end{array} & \begin{array}{c} \mathring{h} \mathfrak{A} \\ \downarrow \\ \mathfrak{A} \end{array} \\ & \begin{array}{c} \mathring{h} \mathfrak{A} \mathring{h} \mathfrak{A} \\ \mathfrak{A} \mathfrak{A} \end{array} & \\ & \begin{array}{c} \mathbb{L} \quad \mathbb{L} \end{array} & \\ \mathbb{h}_{\triangleleft} \mathbb{K} & \xleftarrow{\quad \mathbb{L} \quad} & n \mathbb{K} \end{array}$$

$$\mathbb{L}^i \star_{\mathfrak{h}} \mathbb{L}^j = \begin{cases} \mathbb{L}^{*i} \mathring{h} \mathbb{L}^j & = \mathring{h} \mathfrak{A}^{ij} \\ \mathbb{L}^{*i} \mathbb{L}_{\mathfrak{h}} \mathbb{L}^j & = {}_i \mathbb{L} \mathbb{L}_{\mathfrak{h}} \mathbb{L}^j = {}_i \mathbb{L}_{\mathfrak{h}}^j \end{cases}$$

$$\mathbb{h}_{\triangleleft} \mathbb{K} \ni \begin{cases} \mathring{h} \mathfrak{A}^j & = \mathring{h} \mathfrak{A} \mathbb{L}^j \\ \mathfrak{A}^j & = \mathfrak{A} \mathbb{L}^j \end{cases} \quad \text{dual ONBasis} \quad \begin{cases} \mathring{h} \mathfrak{A} & = \mathring{h} \mathfrak{A}_j^j \mathbb{L} \\ \mathfrak{A} & = \mathfrak{A}_j^j \mathbb{L} \end{cases}$$

$$\begin{cases} \mathring{h} \mathfrak{A}_i^i \star_{\mathfrak{h}} \mathring{h} \mathfrak{A}_j^j = \mathring{h} \mathfrak{A}_i^i \mathring{h} \mathfrak{A} \mathring{h} \mathfrak{A}_j^j = \mathring{h} \mathfrak{A}_i^i \underbrace{\mathring{h} \mathfrak{A}^* \mathring{\eta} \mathring{h} \mathfrak{A}} \mathring{h} \mathfrak{A}_j^j = \overbrace{\mathring{h} \mathfrak{A}_i^i \mathring{h} \mathfrak{A} \mathring{\eta} \mathring{h} \mathfrak{A}_j^j \mathring{h} \mathfrak{A}}^* = \overbrace{\mathring{h} \mathfrak{A} \mathbb{L}^i \mathring{h} \mathfrak{A}^* \mathring{\eta} \mathring{h} \mathfrak{A}}^* \mathring{h} \mathfrak{A}_j^j = {}_i \mathbb{L} \underbrace{\mathring{h} \mathfrak{A}^* \mathring{h} \mathfrak{A} \mathring{\eta} \mathring{h} \mathfrak{A}} \mathbb{L}^j = {}_i \mathbb{L} \mathring{\eta} \mathbb{L}^j = \eta^{ij} \\ \mathfrak{A}_i^i \star_{\mathfrak{h}} \mathfrak{A}_j^j = \mathfrak{A}_i^i \mathbb{L}_{\mathfrak{h}} \mathfrak{A}_j^j = \mathfrak{A}_i^i \underbrace{\mathbb{L}^* \mathring{\eta} \mathbb{L}} \mathfrak{A}_j^j = \underbrace{\mathbb{L} \mathfrak{A}_i^i \mathring{\eta} \mathbb{L}}^* \mathfrak{A}_j^j = \overbrace{\mathfrak{A} \mathbb{L}^i \mathbb{L}^* \mathring{\eta} \mathbb{L}}^* \mathfrak{A}_j^j = {}_i \mathbb{L} \underbrace{\mathfrak{A}^* \mathring{\eta} \mathbb{L}} \mathfrak{A}_j^j \end{cases}$$

$$\mathbb{A} \star_{\mathfrak{h}} \mathbb{A} = \underbrace{\mathbb{L} \mathbb{A}} \star \underbrace{\mathbb{L} \mathbb{A}} = \overbrace{\mathbb{L} \mathbb{A} \mathring{\eta} \mathbb{L} \mathbb{A}}^* = \mathbb{A} \mathbb{L}^* \mathring{\eta} \mathbb{L} \mathbb{A} = \mathbb{A} \mathbb{L}_{\mathfrak{h}} \mathbb{A}$$

$$\mathbb{L}_{\mathfrak{h}} = \mathring{h} \mathfrak{A}^* \eta^{..} \mathring{h} \mathfrak{A} = \mathring{h} \mathfrak{A}_i^* \eta^{ij} \mathring{h} \mathfrak{A}_j$$

$$\mathbb{Y} = \begin{cases} \mathring{h} \mathfrak{A} \mathring{h} \mathfrak{A}_j^j \mathbb{Y} \\ \mathbb{L} \mathfrak{A}_j^j \mathbb{Y} \end{cases} \quad : \quad {}_i \delta^j = \begin{cases} \mathring{h} \mathfrak{A}_i^i \mathring{h} \mathfrak{A}_j^j \\ {}_i \mathbb{L} \mathfrak{A}_j^j \end{cases}$$

$$.4 = \left\{ \begin{array}{c} \underbrace{h_1 \quad h_2}_{.4} \\ \underbrace{.4 \quad .4}_{.4} \end{array} \right\} : \quad {}_\mu \delta^\nu = \left\{ \begin{array}{c} \underbrace{h_1 \quad h_2}_{\mu} \\ \underbrace{.4 \quad .4}_{\mu} \end{array} \right\}^\nu$$

$$\mathcal{L}^{\circ} = \begin{cases} \mathcal{L}^{\circ} \mathcal{L}^{\circ} & = \mathcal{L}^{\circ} \mathcal{L}^{\circ} \\ \mathcal{L}^{\circ} \mathcal{L}^{\circ} & = \mathcal{L}^{\circ} \mathcal{L}^{\circ} \end{cases} \quad \mathcal{L}^j = \begin{cases} \mathcal{L}^{\circ} \mathcal{L}^j & = \mathcal{L}^{\circ} \mathcal{L}^j \\ \mathcal{L}^{\circ} \mathcal{L}^j & = \mathcal{L}^{\circ} \mathcal{L}^j \end{cases}$$

$$\mathbb{Z}_{\mathbb{A}} = \begin{cases} h_{\mathbb{A}}^{h_{\mathbb{A}}} = h_{\mathbb{A}}^{h_{\mathbb{A}}} \\ \mathbb{A}_{\mathbb{A}} = \mathbb{A}_{\mathbb{A}} \end{cases} \quad \mathbb{Z}^{\nu} = \begin{cases} h_{\mathbb{A}}^{h_{\mathbb{A}}} = h_{\mathbb{A}}^{h_{\mathbb{A}}} \\ \mathbb{A}^{\nu} = \mathbb{A}^{\nu} \end{cases}$$

$$\begin{cases} \mathcal{A}^j = \mathcal{L}^{\lambda} \mathcal{A}^j = \mathcal{A}^j \mathcal{L}^j \\ \mathcal{A}^j = \mathcal{L}^{\lambda} \mathcal{A}^j = \mathcal{A}^j \mathcal{L}^j \end{cases} \begin{cases} \mathcal{A}^j = \mathcal{L}^{\lambda} \mathcal{A}^j = \mathcal{A}^j \mathcal{L}^j \\ \mathcal{A}^j = \mathcal{L}^{\lambda} \mathcal{A}^j = \mathcal{A}^j \mathcal{L}^j \end{cases}$$

$$\begin{cases} \mathbf{h}^{\circ} \mathbf{A} = \mathbf{L} \mathbf{h}^{\circ} \mathbf{A} = \mathbf{h}^{\circ} \mathbf{L} \mathbf{A} \\ \mathbf{b} \mathbf{A} = \mathbf{L} \mathbf{b} \mathbf{A} = \mathbf{b} \mathbf{L} \mathbf{A} \end{cases} \quad \begin{cases} \mathbf{h}^{\circ} \nu = \mathbf{L}^k \mathbf{h}_k^{\circ} \nu = \mathbf{h}^{\circ} \mathbf{L} \nu \\ \mathbf{b} \nu = \mathbf{L}^k \mathbf{b}_k \nu = \mathbf{b} \mathbf{L} \nu \end{cases}$$

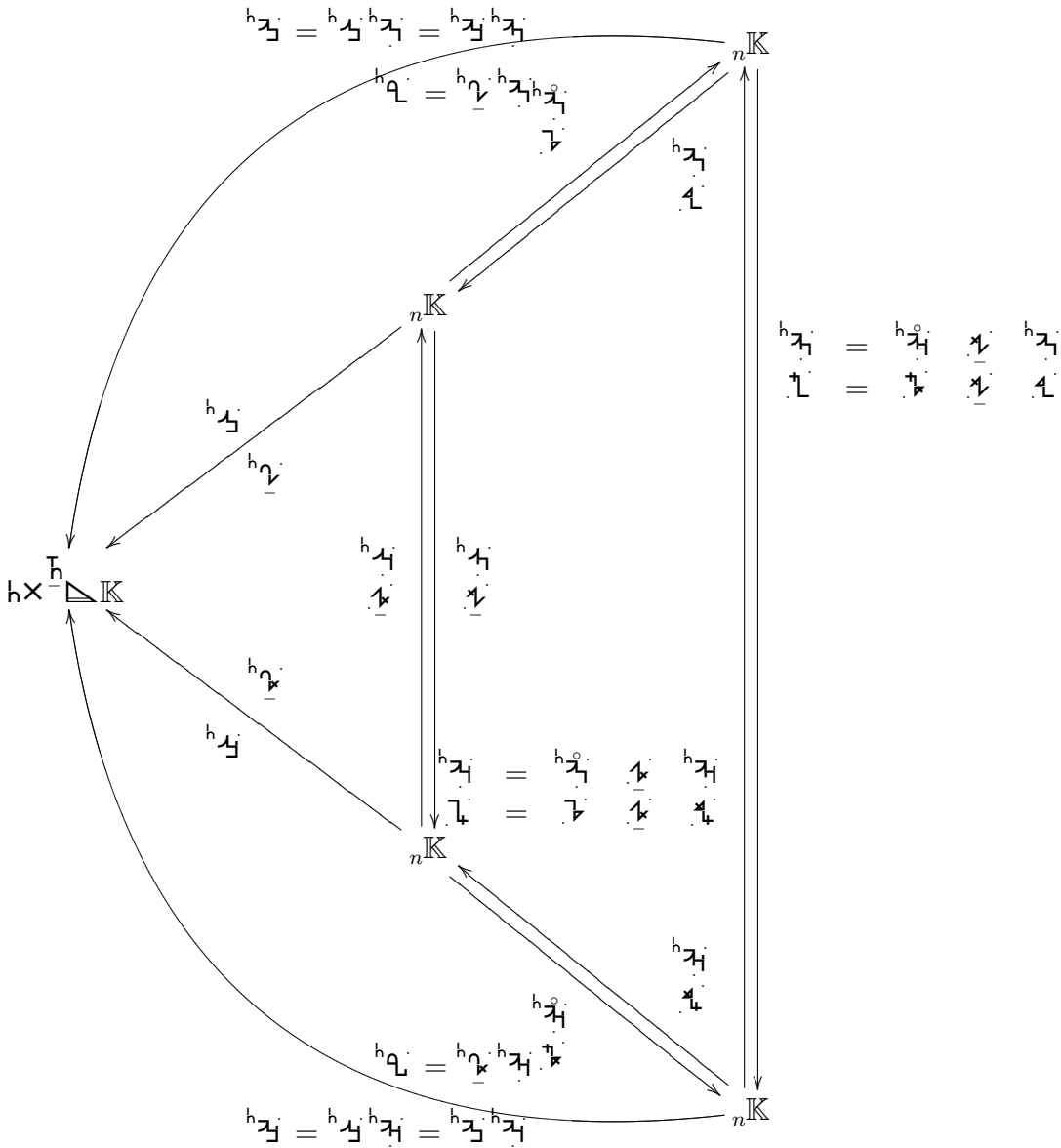
$$\begin{cases} \mathbf{h}_{\mathbf{A}^j} = \mathbf{L} \mathbf{h}_{\mathbf{A}^j} = \mathbf{h}_{\mathbf{A}^j} \mathbf{L} \\ \mathbf{A}^j = \mathbf{L} \mathbf{A}^j = \mathbf{A}^j \mathbf{L} \end{cases} \quad \begin{cases} \mathbf{h}_{\mu}^j = \mathbf{L} \mathbf{h}_{\mu}^j = \mathbf{h}_{\mu}^j \mathbf{L} \\ \mathbf{A}_{\mu}^j = \mathbf{L} \mathbf{A}_{\mu}^j = \mathbf{A}_{\mu}^j \mathbf{L} \end{cases}$$

$$\begin{cases} \overset{\circ}{\mathfrak{A}}^{\circ} \cdot 4 = \mathfrak{L} \overset{\circ}{\mathfrak{A}}^{\circ} \cdot 4 = \overset{\circ}{\mathfrak{A}}^{\circ} \mathfrak{L} \cdot 4 \\ \mathfrak{B}^{\circ} \cdot 4 = \mathfrak{L} \mathfrak{B}^{\circ} \cdot 4 = \mathfrak{B}^{\circ} \mathfrak{L} \cdot 4 \end{cases} \begin{cases} \overset{\circ}{\mathfrak{A}}^{\nu} = \mathfrak{L} \overset{\circ}{\mathfrak{A}}^{\nu} = \overset{\circ}{\mathfrak{A}}^{\circ} \mathfrak{L}^j \\ \mathfrak{B}^{\nu} = \mathfrak{L} \mathfrak{B}^{\nu} = \mathfrak{B}^{\circ} \mathfrak{L}^j \end{cases}$$

$$\begin{array}{ccc}
& & n\mathbb{K} \\
& \swarrow^{h_{\mathcal{V}} = h_{\mathcal{K}} \cdot \mathcal{V}} & \uparrow^{h_{\mathcal{V}}} \\
h \times^h \triangle \mathbb{K} & & \mathbb{K} \\
& \nwarrow_{h_{\mathcal{K}} = h_{\mathcal{V}} \cdot \mathcal{K}} & \downarrow_{h_{\mathcal{K}}}
\end{array}$$

$$h \times \frac{1}{h} \mathbb{K} \ni \gamma_{-}^{\nu} \text{ dual holonomic basis } \mathbf{A} \otimes_{\mathbf{h}} \mathbf{A} = \underbrace{h \gamma_{-} \mathbf{A}} \otimes \underbrace{h \gamma_{-} \mathbf{A}}$$

$$A = \underbrace{A_h}_{\nu} : \mu \delta^\nu = \mu \underbrace{A_h}_{\nu}$$



$$h \times \mathbb{K} \ni \begin{cases} h^j \\ h^j \end{cases} \quad \text{dual ONbasis } h^i \otimes h^j = \eta^{ij}$$

$$\mathcal{Y} = \left\{ \begin{matrix} \mathcal{Y}_1^h & \mathcal{Y}_2^h \\ \mathcal{Y}_h & \mathcal{Y}_h^h \end{matrix} \right\} : \quad {}_i\mathcal{O}^j = \left\{ \begin{matrix} \mathcal{O}_1^h & \mathcal{O}_i^h \\ \mathcal{O}_h & \mathcal{O}_h^h \end{matrix} \right\}$$

$$\begin{cases} \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{y} = \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{y} \\ \mathfrak{h}\mathfrak{q}^{\cdot}\mathfrak{y} = \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{h}\mathfrak{q}^{\cdot}\mathfrak{y} \end{cases} \begin{cases} \mathfrak{h}\mathfrak{z}^j = \mathfrak{z}^{\lambda}_{\mathfrak{h}}\mathfrak{z}^j_{\lambda} \\ \mathfrak{h}\mathfrak{q}^j = \mathfrak{h}\mathfrak{z}^{\lambda}_{\mathfrak{h}}\mathfrak{q}^j_{\lambda} \end{cases}$$

$$\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{q} = \begin{cases} \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{h}\mathfrak{z}^{\circ}\mathfrak{q} \\ \mathfrak{h}\mathfrak{q}^{\cdot}\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{q} \end{cases} \quad \mathfrak{h}\mathfrak{z}^{\nu} = \begin{cases} \mathfrak{h}\mathfrak{z}^k\mathfrak{h}\mathfrak{z}^{\circ}_{\mathfrak{k}}\mathfrak{z}^{\nu} \\ \mathfrak{h}\mathfrak{q}^{\mathfrak{k}}\mathfrak{h}\mathfrak{z}^{\nu}_{\mathfrak{k}} \end{cases}$$

$$\begin{cases} \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{y} = \mathfrak{z}^{\cdot}_{\mathfrak{h}}\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{y} \\ \mathfrak{h}\mathfrak{q}^{\cdot}\mathfrak{y} = \mathfrak{z}^{\cdot}_{\mathfrak{h}}\mathfrak{h}\mathfrak{q}^{\cdot}\mathfrak{y} \end{cases} \begin{cases} \mathfrak{h}\mathfrak{z}^j_{\mu} = \mathfrak{z}^{\mathfrak{h}}_{\mu}\mathfrak{h}\mathfrak{z}^j \\ \mathfrak{h}\mathfrak{q}^j_{\mu} = \mathfrak{z}^{\mathfrak{h}}_{\mu}\mathfrak{h}\mathfrak{q}^j \end{cases}$$

$$\begin{cases} \mathfrak{h}\mathfrak{z}^{\circ}\mathfrak{q} = \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{q} \\ \mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{q} = \mathfrak{z}^{\mathfrak{h}}_{\mathfrak{h}}\mathfrak{h}\mathfrak{z}^{\cdot}\mathfrak{q} \end{cases} \begin{cases} \mathfrak{h}\mathfrak{z}^{\circ}_{\mathfrak{i}}\mathfrak{z}^{\nu} = \mathfrak{h}\mathfrak{z}^{\mathfrak{h}}_{\mathfrak{i}}\mathfrak{h}\mathfrak{z}^{\nu}_{\mathfrak{h}} \\ \mathfrak{h}\mathfrak{z}^{\nu}_{\mathfrak{i}} = \mathfrak{z}^{\mathfrak{h}}_{\mathfrak{i}}\mathfrak{h}\mathfrak{z}^{\nu}_{\mathfrak{h}} \end{cases}$$

