$$\text{co basis } \daleth = \; \daleth^1 \;\big|\; \daleth^i \;\big|\; \daleth^p$$

$$\overset{\sharp}{X} \ni \daleth^i \;{}_i\gimel \xleftarrow[\text{lin}]{\daleth} {}_p\mathbb{R} \ni \gimel$$

$$\begin{array}{ccc} \overset{\sharp}{X} & \xleftarrow{\quad\quad\quad\daleth\quad\quad\quad} & {}_p\mathbb{R} \\ \cup & & \cup \\ \overset{\sharp}{X}_{\daleth} & \xleftarrow[\quad\quad\quad\daleth\quad\quad\quad]{} & {}_p\mathbb{R}_+ \end{array}$$

$$\overset{\sharp}{X}_{\daleth} = < \daleth^1 : \daleth^i : \daleth^p >$$

$$\mathbb{C} \xleftarrow{\wp} \overset{\sharp}{X} \supset \Omega \text{ supp}$$

$$\mathbb{C} \xleftarrow{\wp_{\daleth}} {}_p\mathbb{R} \supset {}_p\mathbb{R}_+ \text{ supp}$$

$$\overbrace{\wp_{\daleth}}_{\gimel} = \wp_{\daleth\gimel}$$

$$^{\Bbbk}\hat{\wp}_{\daleth} = \int_{d\gimel}^{{}_p\mathbb{R}_+} \mathfrak{e}^{-i\Bbbk\gimel}\, \wp_{\daleth\gimel}$$

$$\Bbbk \in \mathbb{R}^p \xrightarrow{\hat{\wp}_{\daleth}} \mathbb{C}$$

$$^{\Bbbk}\overbrace{\partial_i \jmath} = \frac{\partial \jmath}{\partial \Bbbk^i}$$

$$\llcorner \in \overset{\sharp}{\Omega} + iX \subset X^{\mathbb{C}} = \mathbb{C}^n$$

$$\overbrace{\varkappa \hat{\wp}_{\daleth}}^{\llcorner} = \det \; \daleth^1 \;\Big|\; . \;\Big|\; \daleth^p \;\Big|\; d\daleth^{i\;\llcorner\daleth}\, \overbrace{\partial_i \hat{\wp}_{\daleth}} \;\Big|\; . \;\Big|\; d\daleth^{i\;\llcorner\daleth}\, \overbrace{\partial_i \hat{\wp}_{\daleth}}$$

$$z \in X \,\ulcorner\, \ker \daleth$$

$$z^i = z\,\daleth^i = \underbrace{z + \ker \daleth}\,\daleth^i$$

$$\text{dual vector basis } \frac{{}_1\Finv}{\dfrac{{}_i\Finv}{{}_p\Finv}}$$

$$ {}_i\llcorner \in X \ulcorner \ \ker \ \urcorner $$

$$ {}_i\llcorner \ \urcorner^j = {}_i\delta^j $$

$$ {}^z\overbrace{{}_i\llcorner \urcorner} = \frac{\partial \urcorner}{\ulcorner\urcorner^i} = {}_0\overline{z + t\, {}_i\llcorner}\urcorner \ \text{diff op } X \ulcorner \ \ker \ \urcorner \xrightarrow{\urcorner} \mathbb{C} $$

$$ \text{ONB } {}_\alpha v \in X_c^{1/2} $$

$$ d\urcorner^i = dv^j \frac{\ulcorner\urcorner^i}{\partial v^j} = dv^j \ {}_j\urcorner^i $$

$$ \det \ \urcorner^1 \,\Big|\, \cdot \,\Big|\, \urcorner^p \,\Big|\, dv^j \ {}_j\dashv \,\Big|\, \cdot \,\Big|\, dv^j \ {}_j\dashv $$

$$ = \underbrace{dv^1} \ \ddot{\Join} \ \underbrace{dv^q} \det \ \urcorner^1 \,\Big|\, \dashv \,\Big|\, \urcorner^p \,\Big|\, {}_1\dashv \,\Big|\, \cdot \,\Big|\, {}_q\dashv $$

$$ \urcorner^1 \,\Big|\, \cdot \,\Big|\, \urcorner^p \,\Big|\, dv^j \ {}_j\dashv \,\Big|\, \cdot \,\Big|\, dv^j \ {}_j\dashv = \begin{array}{c|c} 1 & 0 \\ \hline 0 & \begin{array}{c|c|c} dv^1 & \cdot & dv^q \\ \hline \cdot & \cdot & \cdot \\ \hline dv^1 & \cdot & dv^q \end{array} \end{array} \ \urcorner^1 \,\Big|\, \cdot \,\Big|\, \urcorner^p \,\Big|\, {}_1\dashv \,\Big|\, \cdot \,\Big|\, {}_q\dashv $$

$$ \det \ \urcorner^1 \,\Big|\, \urcorner^i \,\Big|\, \urcorner^p \,\Big|\, \urcorner^{i_1}_{-} \ {}_{i_1}\llcorner \,\Big|\, \urcorner^{i_j}_{-} \ {}_{i_j}\llcorner \,\Big|\, \urcorner^{i_q}_{-} \ {}_{i_q}\llcorner $$

$$ = \underbrace{dv^1} \ \ddot{\Join} \ \underbrace{dv^q} \det \ \urcorner^1 \,\Big|\, \urcorner^i \,\Big|\, \urcorner^p \,\Big|\, \urcorner^{i_1}_{-1} \ {}_{i_1}\llcorner \,\Big|\, \urcorner^{i_j}_{-j} \ {}_{i_j}\llcorner \,\Big|\, \urcorner^{i_q}_{-q} \ {}_{i_q}\llcorner $$

$$ \text{LHS} = \det \ \urcorner^1 \,\Big|\, \urcorner^i \,\Big|\, \urcorner^p \,\Big|\, \urcorner^{i_1}_{-\alpha} \ {}_{i_1}\llcorner dv^\alpha \,\Big|\, \urcorner^{i_j}_{-\alpha} \ {}_{i_j}\llcorner dv^\alpha \,\Big|\, \urcorner^{i_q}_{-\alpha} \ {}_{i_q}\llcorner dv^\alpha = \text{RHS} $$

$$ \det \ \urcorner^1 \,\Big|\, \urcorner^i \,\Big|\, \urcorner^p \,\Big|\, \urcorner^{i_1}_{-1} \ {}_{i_1}\llcorner \,\Big|\, \urcorner^{i_j}_{-j} \ {}_{i_j}\llcorner \,\Big|\, \urcorner^{i_q}_{-q} \ {}_{i_q}\llcorner \ \ \mathfrak{e}^{x|\urcorner} = \det \ \urcorner^1 \,\Big|\, \urcorner^i \,\Big|\, \urcorner^p \,\Big|\, \urcorner_{-1}\urcorner \,\Big|\, \urcorner_{-j}\urcorner \,\Big|\, \urcorner_{-q}\urcorner \ \ \mathfrak{e}^{x|\urcorner} $$

$$ \urcorner^{i_j}_{-j} \ {}_{i_j}\llcorner \urcorner = \urcorner^{i_j}_{-j} \ {}_{i_j}\urcorner = \urcorner_{-j}\urcorner $$

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$$ \llcorner T_{\urcorner} = \llcorner\urcorner^1 \,\Big|\, \llcorner\urcorner^i \,\Big|\, \llcorner\urcorner^p \,\Big|\, \llcorner\urcorner_{-1}\urcorner \,\Big|\, \llcorner\urcorner_{-j}\urcorner \,\Big|\, \llcorner\urcorner_{-q}\urcorner $$

$$ \llcorner\urcorner = \llcorner^{0|1} \ \ell_{\urcorner} $$

$$ \ell_{\urcorner} = P^{-\,1/2}_{e\,+\,v^2} \, P_{2c\,-\,e\,+\,v} $$

$$\mathsf{L}\,\underline{\text{ᓄ}}_j = \frac{\partial \mathsf{L}\text{ᓄ}}{\partial v^j} = \mathsf{L}\, v_j\, {}^0\underline{\text{ᓄ}} = v_j\, {}^0\underline{\mathsf{L}\text{ᓄ}} = v_j\, \mathsf{L}^{0|1}\, {}^0\underline{\ell} = \mathsf{L}^{0|1}\, v_j\, {}^0\underline{\ell}$$

$$\mathsf{L}\,\underline{\text{ᓄ}}_j\,\mathsf{1} = \mathsf{L}^{0|1}\, v_j\, {}^0\underline{\ell}\,\mathsf{1}$$

$$\mathsf{L}\text{ᓄ}\mathsf{1} = \mathsf{L}\, P^{-\,1/2}_{e\,+\,v^2}\, P_{2c\,-\,e\,+\,v}\,\mathsf{1}$$