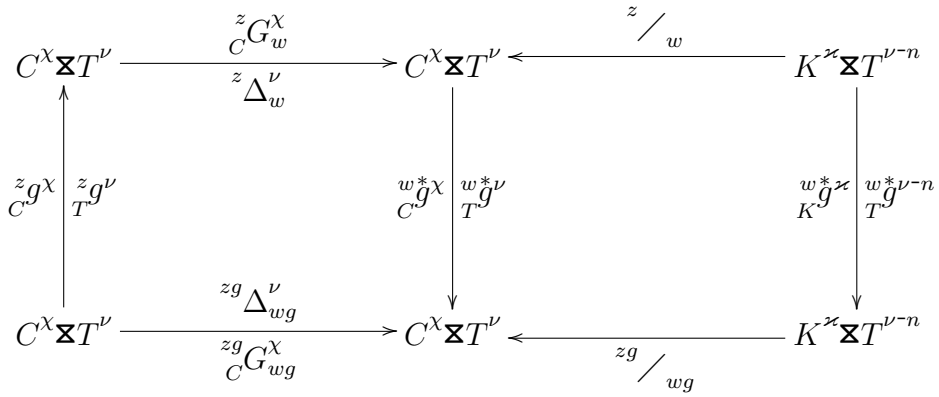
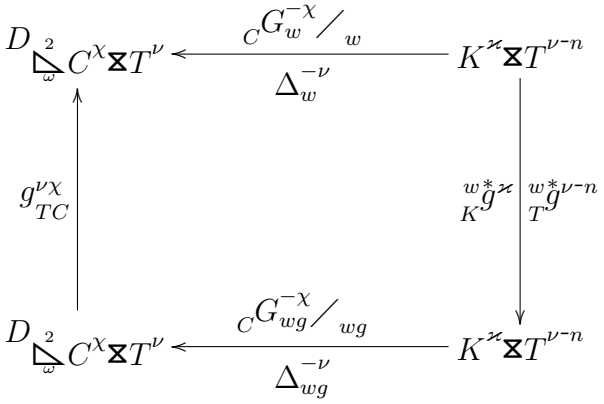


$$ {}^{-1}_{TC} g^{\nu\chi} \underbrace{\Delta^{-\nu}_w \, {}_C G^{-\chi}_w \diagup_w \mathbb{1}} = {}^{w*}_T g^{\nu-n} \, \Delta^{-\nu}_{wg} \, {}_C G^{-\chi}_{wg} \underbrace{\diagup_{wg} {}^{w*}_K g^{\varkappa} \mathbb{1}} $$



$$ {}^{zg}\mathrm{LHS} = {}^{zg}_T \overline{g}^{1\nu} \, {}^{zg}_C \overline{g}^{1\chi} \, \overbrace{{}^z\Delta^{-\nu}_w \, {}_C G^{-\chi}_w \diagup_w \mathbb{1}} = {}^z_T g^{-\nu} \, {}^z_C g^{-\chi} \, {}^z\Delta^{-\nu}_w \, {}^z_C G^{-\chi}_w \, {}^z \diagup_w \mathbb{1} = {}^z_T g^{-\nu} \, {}^z\Delta^{-\nu}_w \, {}^z_C g^{-\chi} \, {}^z_C G^{-\chi}_w \, {}^z \diagup_w \mathbb{1} $$

$$ = {}^{zg}\Delta^{-\nu}_{wg} \, {}^{w*}_T g^{\nu} \, {}^{zg}_C G^{-\chi}_{wg} \, {}^{w*}_C g^{\chi} \, {}^z \diagup_w \mathbb{1} = {}^{zg}\Delta^{-\nu}_{wg} \, {}^{zg}_C G^{-\chi}_{wg} \, {}^{zg} \diagup_{wg} {}^{w*}_K g^{\varkappa} \mathbb{1} \, {}^{w*}_T g^{\nu-n} = {}^{w*}_T g^{\nu-n} \, {}^{zg}\overbrace{\Delta^{-\nu}_{wg} \, {}_C G^{-\chi}_{wg} \diagup_{wg} {}^{w*}_K g^{\varkappa} \mathbb{1}} = {}^{zg}\mathrm{RHS} $$

$$\mathcal{I}\underbrace{\Delta^{n-\nu}_{w\ \ K}G^{-\varkappa}_{w}\mathbb{1}} = \Delta^{-\nu}_{w\ \ C}G^{-\chi}_{w}\diagup_{w}\mathbb{1}$$

$$D^{\ 2}_{\omega}C^{\chi}\boxtimes T^{\nu} \xleftarrow{\mathcal{I}} D^{\ 2}_{\omega}K^{\varkappa}\boxtimes T^{\nu-n}$$

$$\mathcal{I}\overbrace{{}^{-1}g^{\nu-n\varkappa}_{TK}\underbrace{\Delta^{n-\nu}_{w\ \ K}G^{-\varkappa}_{w}\mathbb{1}}} = \mathcal{I}\overbrace{{}^{w^*}_{T}g^{\nu-n}\Delta^{n-\nu}_{wg\ K}G^{-\varkappa}_{wg}{}^{w^*}_{K}g^{\varkappa}\mathbb{1}} = {}^{w^*}_{T}g^{\nu-n}\mathcal{I}\overbrace{\Delta^{n-\nu}_{wg\ K}G^{-\varkappa}_{wg}{}^{w^*}_{K}g^{\varkappa}\mathbb{1}}$$

$$= {}^{w^*}_{T}g^{\nu-n}\,\Delta^{-\nu}_{wg\ C}G^{-\chi}_{wg}\diagup_{wg}\,{}^{w^*}_{K}g^{\varkappa}\mathbb{1} = {}^{-1}_{TC}g^{\nu\chi}\underbrace{\Delta^{-\nu}_{w\ C}G^{-\chi}_{w}\diagup_{w}\mathbb{1}} = {}^{-1}_{TC}g^{\nu\chi}\overbrace{\mathcal{I}\underbrace{\Delta^{n-\nu}_{w\ \ K}G^{-\varkappa}_{w}\mathbb{1}}}$$