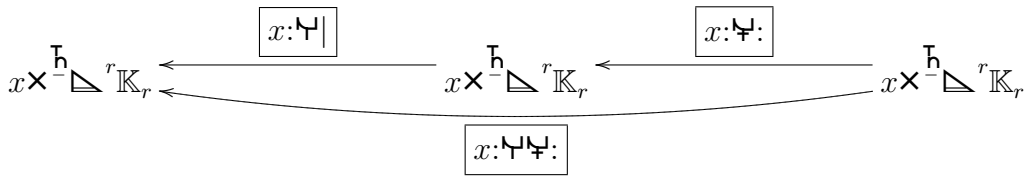
$$\Upsilon \in {}^{\mathsf{T}\!\mathsf{h}}_{\infty}\!\Delta^{r}\mathbb{K}_{r}^{\mathsf{C}}$$



$$\underset{\sigma}{{}^{x}\boxed{\Upsilon|\Psi}^{\,i}_{\,m}} = {}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k}\ {}^{x}\Upsilon^{k}_{m}{}^{-1} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}\ {}^{x}\Upsilon^{k}_{m}{}^{-1} = \overbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{m}{}^{-1}$$

$$\underset{\sigma}{{}^{x}\boxed{\Upsilon|\Psi}_{\,\cdot}} = {}^{x}\Upsilon_{\cdot}\ {}_{\sigma}\Psi_{\cdot}\ {}^{x}\Upsilon_{\cdot}^{-1} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon_{\cdot}}\ {}^{x}\Upsilon_{\cdot}^{-1} = \overbrace{{}^{x}\Upsilon_{\cdot}\ {}_{\sigma}\Psi_{\cdot} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon_{\cdot}}}\ {}^{x}\Upsilon_{\cdot}^{-1}$$

$${}^{x}\wr = x = {}^{x}\imath$$

$$\underset{\mu\sigma}{{}^{x}\boxed{\Upsilon|\Psi{:}\Psi}^{\,i}_{\,m}} = \overbrace{{}^{x}\underset{\mu}{\Upsilon}^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ n} - \varkappa\ {}^{x}\underset{\mu\sigma}{\Upsilon}^{i}_{\ n} - \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{\ell}{}^{-1}\ \underset{\mu}{{}^{x}\Upsilon^{\ell}_{\ n}} + {}^{x}\Upsilon^{i}_{\ j}\ {}_{\mu\sigma}\Psi^{j}_{\ n}}\ {}^{x}\Upsilon^{n}_{m}{}^{-1}$$

$$\underset{\mu\sigma}{\overset{\sim}{{}^{x}\Psi_{\cdot}}} = \underset{\mu}{{}^{x}\wr}^{-1\,\nu}\ \overbrace{\underset{\sigma}{{}^{x}\boxed{x{:}\Upsilon|\Psi}^{\,\cdot}_{\,\nu}} + \underset{\sigma}{{}^{x}\boxed{x{:}\Upsilon|\Psi}^{\,\cdot}_{\,j}}^{\tau}\ {}_{\nu\tau}\Psi^{j}_{\ n}} = \overbrace{{}^{x}\underset{\mu}{\Upsilon}_{\cdot}\ {}_{\sigma}\Psi_{\cdot} - \varkappa\ {}^{x}\underset{\mu\sigma}{\Upsilon}_{\cdot} - {}^{x}\Upsilon_{\cdot}\ {}_{\sigma}\Psi_{\cdot}\ {}^{x}\Upsilon_{\cdot}^{-1}\ \underset{\mu}{{}^{x}\Upsilon_{\cdot}} + \varkappa\ \underset{\sigma}{{}^{x}\Upsilon_{\cdot}}\ {}^{x}\Upsilon_{\cdot}^{-1}\ \underset{\mu}{{}^{x}\Upsilon_{\cdot}} + {}^{x}\Upsilon_{\cdot}\ {}_{\mu\sigma}\Psi_{\cdot}}\ {}^{x}\Upsilon_{\cdot}^{-1}$$

$$\underset{\nu}{{}^{x}\boxed{x{:}\Upsilon|\Psi}^{\,i}_{\,m}} = \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{m}{}^{-1} = \underset{\nu}{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k}} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}\ {}^{x}\Upsilon^{k}_{m}{}^{-1} + \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ \underset{\nu}{{}^{x}\Upsilon^{k}_{m}{}^{-1}}$$

$$= \overbrace{{}^{x}\underset{\nu}{\Upsilon}^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ {}^{x}\underset{\nu\sigma}{\Upsilon}^{i}_{\ k}}\ {}^{x}\Upsilon^{k}_{m}{}^{-1} - \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{\ell}{}^{-1}\ \underset{\nu}{{}^{x}\Upsilon^{\ell}_{\ n}}\ {}^{x}\Upsilon^{n}_{m}{}^{-1} = \overbrace{{}^{x}\underset{\nu}{\Upsilon}^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ n} - \varkappa\ {}^{x}\underset{\nu\sigma}{\Upsilon}^{i}_{\ n} - \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{\ell}{}^{-1}\ \underset{\nu}{{}^{x}\Upsilon^{\ell}_{\ n}}}\ {}^{x}\Upsilon^{n}_{m}{}^{-1}$$

$$\underset{\sigma}{{}^{n}\boxed{x{:}\Upsilon|\Psi}^{\,i}_{\,m}}^{\tau} = {}^{x}\Upsilon^{i}_{\ k}\ {}^{k}\delta_{\ j}\ {}_{\sigma}\delta^{\tau}\ {}^{n}\delta_{\ \ell}\ {}^{x}\Upsilon^{\ell}_{m}{}^{-1} = {}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\delta^{\tau}\ {}^{x}\Upsilon^{n}_{m}{}^{-1}$$

$$\underset{\sigma}{{}^{n}\boxed{x{:}\Upsilon|\Psi}^{\,i}_{\,m}}^{\tau}\ {}_{\nu\tau}\Psi^{j}_{\ n} = {}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\delta^{\tau}\ {}^{x}\Upsilon^{n}_{m}{}^{-1}\ {}_{\nu\tau}\Psi^{j}_{\ n} = {}^{x}\Upsilon^{i}_{\ j}\ {}_{\nu\sigma}\Psi^{j}_{\ n}\ {}^{x}\Upsilon^{n}_{m}{}^{-1}$$

$$\Longrightarrow \text{LHS} = \underset{\mu}{{}^{x}\imath}^{-\nu}\ \overbrace{\underset{\sigma}{{}^{x}\boxed{x{:}\Upsilon|\Psi}^{\,i}_{\,m}}_{\nu} + \underset{\sigma}{{}^{n}\boxed{x{:}\Upsilon|\Psi}^{\,i}_{\,m}}^{\tau}\ {}_{\nu\tau}\Psi^{j}_{\ n}}$$

$$= {}_{\mu}\delta^{\nu}\ \overbrace{{}^{x}\underset{\nu}{\Upsilon}^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ n} - \varkappa\ {}^{x}\underset{\nu\sigma}{\Upsilon}^{i}_{\ n} - \underbrace{{}^{x}\Upsilon^{i}_{\ j}\ {}_{\sigma}\Psi^{j}_{\ k} - \varkappa\ \underset{\sigma}{{}^{x}\Upsilon^{i}_{\ k}}}\ {}^{x}\Upsilon^{k}_{\ell}{}^{-1}\ \underset{\nu}{{}^{x}\Upsilon^{\ell}_{\ n}} + {}^{x}\Upsilon^{i}_{\ j}\ {}_{\nu\sigma}\Psi^{j}_{\ n}}\ {}^{x}\Upsilon^{n}_{m}{}^{-1} = \text{RHS}$$