Inference System $\mathcal{H}$

Superposition right:

$$\frac{\Gamma' \to \quad l \approx r \qquad \Gamma \to \quad s \approx t}{\Gamma'\sigma, \Gamma\sigma \to \quad s[r]_p\sigma \approx t\sigma}$$

where:

$s|_p$ is not a variable, $\sigma = mgu(s|_p, l)$,

$l\sigma \not\leq r\sigma$,

$s\sigma \not\leq t\sigma$.

Superposition left:

$$\frac{\Gamma' \to \quad l \approx r \qquad \Gamma, \quad s \approx t \to \Delta}{\Gamma'\sigma, \Gamma\sigma, \quad s[r]_p\sigma \approx t\sigma \to \Delta\sigma}$$

where:

$s|_p$ is not a variable, $\sigma = mgu(s|_p, l)$,

$l\sigma \not\leq r\sigma$,

$s\sigma \not\leq t\sigma$.

Equality Resolution:

$$\frac{\Gamma, s \approx t \to \Delta}{\Gamma\sigma \to \Delta\sigma}$$

where

$\sigma = mgu(s, t)$.