

# Variables and annotations

$$\frac{\Gamma(x) = A \quad 0 \Gamma + x \vdash \langle 0 \Gamma + x \rangle A \rightsquigarrow B \dashv \Gamma'}{\Gamma \vdash_{\text{c}} x \Rightarrow B \dashv \Gamma'}$$

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$$\frac{\Gamma \vdash A \Rightarrow \text{Type}_r \dashv \Gamma_1 \quad \begin{array}{l} 0 \Gamma_1, 0 \Delta, \square : A \vdash_i e \Rightarrow A' \dashv \Gamma_2 \\ \Gamma_2 \vdash \langle \Gamma_2 \rangle A' \rightsquigarrow B \dashv \Gamma_3 \end{array}}{\Gamma, \square, \Delta \vdash_i (e : A) \Rightarrow B \dashv \Gamma_3 + \Gamma_1, \Delta}$$

## Stationary rules

$$\frac{\Gamma, \Delta, a, \Box : A \vdash_i e \Rightarrow A' \dashv \Gamma', a, \Theta}{\Gamma, \Box : \forall\{a\}. A, \Delta \vdash_i e \Rightarrow \forall\{a\}. A \dashv \Gamma'}$$

$$\frac{0\Gamma, 0\Delta, \Box : A \vdash_i e \Rightarrow A' \dashv \Gamma'}{\Gamma, \Box : !_r A, \Delta \vdash_i e \Rightarrow !_r A \dashv r\Gamma' + \Gamma, \Delta}$$

# Functions

$$\frac{\Gamma, \Delta, 0x : A, \square : B \vdash_i e \Rightarrow B' \dashv \Gamma_1, rx : A, \Theta \quad \Gamma_1 \vdash A \Leftarrow \text{Type}_r \dashv \Gamma_2}{\Gamma, \square : A \rightarrow B, \Delta \vdash_i \lambda x. e \Rightarrow A \rightarrow B \dashv \Gamma_2}$$

$$\frac{\Gamma [\hat{a}_1, \hat{a}_2, \hat{a} = \hat{a}_1 \rightarrow \hat{a}_2], \Delta, 0x : \hat{a}_1, \square : \hat{a}_2 \vdash_i e \Rightarrow A \dashv \Gamma_1, rx : \hat{a}_1, \Theta \quad \Gamma_1 \vdash \hat{a}_1 \Leftarrow \text{Type}_r \dashv \Gamma_2}{\Gamma [\hat{a}], \square : \hat{a}, \Delta \vdash_i \lambda x. e \Rightarrow \hat{a} \dashv \Gamma_2}$$

$$\frac{\begin{array}{l} \Gamma, \blacktriangleright_{\hat{a}}, \hat{a}, 0x : \hat{a}, \square \vdash_i e \Rightarrow A \dashv \Gamma_1, rx : \hat{a}, \Gamma_4 \\ \Gamma_1 \vdash \hat{a} \Leftarrow \text{Type}_r \dashv \Gamma_2, \blacktriangleright_{\hat{a}}, \Gamma_3 \\ B = \forall \{ \text{unsolved}(\Gamma_3) \}. \langle \Gamma_3 \rangle (\hat{a} \rightarrow \forall \{ \text{unsolved}(\Gamma_4) \}. \langle \Gamma_4 \rangle A) \end{array}}{\Gamma, \square, \Delta \vdash_i \lambda x. e \Rightarrow B \dashv \Gamma_2}$$