

# Bewohntheit in $\lambda 2$

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# Structure

luiuh

# P-Formeln

asd

$$\forall \alpha \beta P(\alpha, \beta)$$

# P-Formeln

asd

$$\forall \alpha \beta P(\alpha, \beta)$$

$$\forall \alpha (Q(\alpha, \alpha) \rightarrow P(\alpha, b))$$

keine **P**-Formel

# P-Formeln

asd

$$\forall \alpha \beta P(\alpha, \beta)$$

$$\forall \alpha (Q(\alpha, \alpha) \rightarrow P(\alpha, b))$$

$$\forall \beta (P(\beta, a) \rightarrow \mathbf{false}) \rightarrow \mathbf{false}$$

keine P-Formel

P-Formel

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P-Formel

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keine P-Formel

(Axiom)

$$\Gamma, A \vdash A$$

 $(\rightarrow$  -Introduction)

$$\frac{\Gamma, A \vdash B}{\Gamma \vdash A \rightarrow B}$$

 $(\rightarrow$  -Elimination)

$$\frac{\Gamma \vdash A \rightarrow B \quad \Gamma \vdash A}{\Gamma \vdash B}$$

 $(\forall$  -Introduction)

$$\frac{\Gamma \vdash B}{\Gamma \vdash \forall \alpha B}$$

$$\alpha \notin \text{FV}(\Gamma)$$

 $(\forall$  -Elimination)

$$\frac{\Gamma \vdash \forall \alpha B}{\Gamma \vdash B[\alpha := b]}$$

$$b \in \mathcal{V}_P$$



(Axiom)  $\Gamma, x : t \vdash x : t$

( $\lambda$ -Introduction) 
$$\frac{\Gamma, x : t_1 \vdash M : t_2}{\Gamma \vdash \lambda x : t_1. M : t_1 \rightarrow t_2}$$

( $\lambda$ -Elimination) 
$$\frac{\Gamma \vdash M_1 : t_1 \rightarrow t_2 \quad \Gamma \vdash M_2 : t_1}{\Gamma \vdash M_1 M_2 : t_2}$$

( $\forall$ -Introduction) 
$$\frac{\Gamma \vdash M : t}{\Gamma \vdash \Lambda \alpha. M : \forall \alpha. t} \quad \alpha \notin \text{FV}(\Gamma)$$

( $\forall$ -Elimination) 
$$\frac{\Gamma \vdash M : \forall \alpha. t}{\Gamma \vdash M t' : t [\alpha := t']}$$

$$\begin{array}{c}
 \overline{\Gamma} \vdash x : \forall \vec{\alpha} (P_{\alpha_1 \beta_1}^1 \rightarrow \cdots \rightarrow P_{\alpha_n \beta_n}^n \rightarrow P_{\alpha \beta}) \\
 \hline
 \overline{\Gamma} \vdash x \vec{t} : P_{s_1 t_1}^1 \rightarrow \cdots \rightarrow P_{s_n t_n}^n \rightarrow P_{st} \qquad \overline{\Gamma} \vdash N_1 : P_{s_1 t_1}^1 \\
 \hline
 \vdots \\
 \hline
 \overline{\Gamma} \vdash x \vec{t} N_1 \dots N_{n-1} : P_{s_n t_n}^n \rightarrow P_{st} \qquad \overline{\Gamma} \vdash N_n : P_{s_n t_n}^n \\
 \hline
 \overline{\Gamma} \vdash (x \vec{t} N_1 \dots N_{n-1}) N_n : P_{st}
 \end{array}$$