Unification modulo Boolean Rings

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Structure

luiuh

P-Formeln

asd

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

P-Formeln

asd

$\forall \alpha \beta P(\alpha, \beta)$ keine **P**-Formel

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

P-Formeln

asd

$\forall \alpha \beta P(\alpha, \beta)$	keine **P**-Formel
$\forall \alpha (Q(\alpha, \alpha) \to P(\alpha, b))$	**P**-Formel
$\forall \beta (P(\beta, a) \to \mathbf{false}) \to \mathbf{false}$	

P-Formeln

asd

$\forall \alpha \beta P(\alpha, \beta)$	keine **P**-Formel
$\forall \alpha (Q(\alpha, \alpha) \to P(\alpha, b))$	**P**-Formel
$\forall \beta (P(\beta, a) \to \textbf{false}) \to \textbf{false}$	**P**-Formel
$\forall \alpha (\forall \beta (P(\beta, \alpha) \to \textbf{false}) \to \textbf{false})$	

P-Formeln

asd

$\forall \alpha \beta P(\alpha, \beta)$	keine **P**-Formel
$\forall \alpha (Q(\alpha, \alpha) \rightarrow P(\alpha, b))$	**P**-Formel
$\forall \beta (P(\beta, a) \rightarrow \mathbf{false}) \rightarrow \mathbf{false}$	**P**-Formel
$\forall \alpha (\forall \beta (P(\beta, \alpha) \rightarrow \mathbf{false}) \rightarrow \mathbf{false})$	keine **P**-Formel

asd

asd

(Axiom)	$\Gamma, A \vdash A$	
($\to$ -Introduction)	$\dfrac{\Gamma, A \vdash B}{\Gamma \vdash A \to B}$	
($\to$ -Elimination)	$\dfrac{\Gamma \vdash A \to B \quad \Gamma \vdash A}{\Gamma \vdash B}$	
($\forall$-Introduction)	$\dfrac{\Gamma \vdash B}{\Gamma \vdash \forall \alpha B}$	$\alpha \notin \mathrm{FV}(\Gamma)$
($\forall$-Elimination)	$\dfrac{\Gamma \vdash \forall \alpha B}{\Gamma \vdash B\,[\alpha := b]}$	$b \in \mathcal{V}_P$

asd

asd

(Axiom)	$\Gamma, x : t \vdash x : t$	
(λ-Introduction)	$\dfrac{\Gamma, x : t_1 \vdash M : t_2}{\Gamma \vdash \lambda x : t_1 . M : t_1 \to t_2}$	
(λ-Elimination)	$\dfrac{\Gamma \vdash M_1 : t_1 \to t_2 \quad \Gamma \vdash M_2 : t_1}{\Gamma \vdash M_1 M_2 : t_2}$	
($\forall$-Introduction)	$\dfrac{\Gamma \vdash M : t}{\Gamma \vdash \Lambda\alpha . M : \forall\alpha . t}$	$\alpha \notin \mathsf{FV}(\Gamma)$
($\forall$-Elimination)	$\dfrac{\Gamma \vdash M : \forall\alpha . t}{\Gamma \vdash M\, t' : t\,[\alpha := t']}$	

asd

asd

$$
\dfrac{\dfrac{\vdots}{\dfrac{\dfrac{\overline{\Gamma} \vdash x : \forall\vec{\alpha}(P^1_{\alpha_1\beta_1} \to \cdots \to P^n_{\alpha_n\beta_n} \to P_{\alpha\beta})}{\overline{\Gamma} \vdash x\vec{t} : P^1_{s_1t_1} \to \cdots \to P^n_{s_nt_n} \to P_{st}} \qquad \overline{\Gamma} \vdash N_1 : P^1_{s_1t_1}}{}}{\overline{\Gamma} \vdash x\vec{t}N_1 \ldots N_{n-1} : P^n_{s_nt_n} \to P_{st}} \qquad \overline{\Gamma} \vdash N_n : P^n_{s_nt_n}}{\overline{\Gamma} \vdash (x\vec{t}N_1 \ldots N_{n-1})N_n : P_{st}}
$$