

System PJ (approximately)

CS 6118 - Types and Semantics

Initial Rule

$$\text{Axiom} \frac{}{A \vdash A}$$

Structural Rules

$$\text{Exchange} \frac{\Gamma, A, B, \Gamma' \vdash C}{\Gamma, B, A, \Gamma' \vdash C} \quad \text{Contraction} \frac{A, A, \Gamma \vdash B}{A, \Gamma \vdash B} \quad \text{Weakening} \frac{A, \Gamma \vdash B}{\Gamma \vdash B}$$

Cut Rule

$$\text{Cut} \frac{\Gamma \vdash A \quad A, \Gamma' \vdash B}{\Gamma, \Gamma' \vdash B}$$

Proposition Rules

$$\begin{array}{c} \perp_L \frac{}{\perp, \Gamma \vdash A} \\ \wedge_L \frac{A, B, \Gamma \vdash C}{A \wedge B, \Gamma \vdash C} \quad \wedge_R \frac{\Gamma \vdash A \quad \Gamma \vdash B}{\Gamma \vdash A \wedge B} \\ \vee_L \frac{A, \Gamma \vdash C \quad B, \Gamma \vdash C}{A \vee B, \Gamma \vdash C} \quad \vee_R^L \frac{\Gamma \vdash A}{\Gamma \vdash A \vee B} \quad \vee_R^R \frac{\Gamma \vdash B}{\Gamma \vdash A \vee B} \\ \supset_L \frac{\Gamma \vdash A \quad B, \Gamma \vdash C}{A \supset B, \Gamma \vdash C} \quad \supset_R \frac{A, \Gamma \vdash B}{\Gamma \vdash A \supset B} \end{array}$$