

Terms:

$$t, u ::= x \mid t u \mid \lambda x. t$$

Fireballs, inerts and normal forms:

$$\begin{aligned} f & ::= x \mid i \mid \lambda x. t \\ i & ::= x F_1 \cdots F_n \\ F & ::= K \langle f \rangle \end{aligned}$$

Contexts K :

$$K ::= [] \mid i ; K$$

$$\begin{aligned} K_1 \langle \lambda x. t \rangle K_2 \langle \lambda y. u \rangle & \mapsto_{\beta_\lambda} K_1 \langle K_2 \langle t \{ x \leftarrow \lambda y. u \} \rangle \rangle \\ K_1 \langle \lambda x. t \rangle K_2 \langle y \rangle & \mapsto_{\beta_v} K_1 \langle K_2 \langle t \{ x \leftarrow y \} \rangle \rangle \\ K_1 \langle \lambda x. t \rangle K_2 \langle i \rangle & \mapsto_{\beta_i} \begin{cases} K_1 \langle K_2 \langle t \{ x \leftarrow i \} \rangle \rangle & \text{if } x \text{ occurs in } t \\ K_1 \langle K_2 \langle i ; t \rangle \rangle & \text{otherwise} \end{cases} \end{aligned}$$

Evaluation contexts E :

$$E ::= [] \mid t E \mid E t$$