

## Small-step evaluation rules for L23

$$\frac{t_1 \rightarrow t_1'}{\mathbf{S}t_1 \rightarrow \mathbf{S}t_1'} \quad \overline{\mathbf{P}Z \rightarrow Z} \quad \overline{\mathbf{P}S nv_1 \rightarrow nv_1} \quad \frac{t_1 \rightarrow t_1'}{\mathbf{P}t_1 \rightarrow \mathbf{P}t_1'}$$

$$\overline{[Z + t_2] \rightarrow t_2} \quad \overline{[S nv_1 + t_2] \rightarrow [nv_1 + S t_2]} \quad \frac{t_1 \rightarrow t_1'}{\overline{[t_1 + t_2] \rightarrow [t_1' + t_2]}}$$

$$\overline{[Z - nv_2] \rightarrow Z} \quad \overline{[nv_1 - Z] \rightarrow nv_1} \quad \overline{[S nv_1 - S nv_2] \rightarrow [nv_1 - nv_2]}$$

$$\frac{t_1 \rightarrow t_1'}{\overline{[t_1 - t_2] \rightarrow [t_1' - t_2]}} \quad \frac{t_2 \rightarrow t_2'}{\overline{[v_1 - t_2] \rightarrow [v_1 - t_2']}}$$

$$\overline{[Z < Z] \rightarrow \mathbf{F}} \quad \overline{[Z < S nv_2] \rightarrow \mathbf{T}} \quad \overline{[nv_1 < Z] \rightarrow \mathbf{F}} \quad \overline{[S nv_1 < S nv_2] \rightarrow [nv_1 < nv_2]}$$

$$\frac{t_1 \rightarrow t_1'}{\overline{[t_1 < t_2] \rightarrow [t_1' < t_2]}} \quad \frac{t_2 \rightarrow t_2'}{\overline{[v_1 < t_2] \rightarrow [v_1 < t_2']}}$$

$$\overline{[Z > nv_2] \rightarrow \mathbf{F}} \quad \overline{[S nv_1 > Z] \rightarrow \mathbf{T}} \quad \overline{[S nv_1 < S nv_2] \rightarrow [nv_1 > nv_2]}$$

$$\frac{t_1 \rightarrow t_1'}{\overline{[t_1 > t_2] \rightarrow [t_1' > t_2]}} \quad \frac{t_2 \rightarrow t_2'}{\overline{[v_1 > t_2] \rightarrow [v_1 > t_2']}}$$

$$\overline{[\mathbf{T} \&\& t_2] \rightarrow t_2} \quad \overline{[\mathbf{F} \&\& t_2] \rightarrow \mathbf{F}} \quad \frac{t_1 \rightarrow t_1'}{\overline{[t_1 \&\& t_2] \rightarrow [t_1' \&\& t_2]}}$$

$$\overline{[\mathbf{T} \parallel t_2] \rightarrow \mathbf{T}} \quad \overline{[\mathbf{F} \parallel t_2] \rightarrow t_2} \quad \frac{t_1 \rightarrow t_1'}{\overline{[t_1 \parallel t_2] \rightarrow [t_1' \parallel t_2]}}$$

$$\overline{[\mathbf{T} ? t_2 : t_3] \rightarrow t_2} \quad \overline{[\mathbf{F} ? t_2 : t_3] \rightarrow t_3} \quad \frac{t_1 \rightarrow t_1'}{\overline{[t_1 ? t_2 : t_3] \rightarrow [t_1' ? t_2 : t_3]}}$$