

**Definition** (Another poset of intervals)

Given a partially ordered set  $\mathbf{P}$ , an interval is an ordered pair of elements  $\langle l, u \rangle$  of  $\mathbf{P}$ , such that  $l \leq_{\mathbf{P}} u$ . One can define a *poset of intervals* on  $\mathbf{P}$ , denoted  $\mathbf{Int}'(P)$ . Intervals can be ordered using the following rule:

$$\frac{\langle p_1, p_2 \rangle \leq_{\mathbf{Int}'(\mathbf{P})} \langle q_1, q_2 \rangle}{(p_1 \leq_{\mathbf{P}} q_1) \wedge (p_2 \leq_{\mathbf{P}} q_2)}.$$