

**Definition** (Poset of intervals). An interval is an ordered pair of elements  $\langle p, q \rangle$  of  $\mathbf{P}$ , such that  $p \leq_{\mathbf{P}} q$ . Given a poset  $\mathbf{P}$ , one can define a *poset of intervals* on  $\mathbf{P}$ . Intervals can be ordered by inclusion:

$$\frac{\langle p_1, q_1 \rangle \leq_{\text{Tw}(\mathbf{P})} \langle p_2, q_2 \rangle}{(p_2 \leq_{\mathbf{P}} p_1) \wedge (q_1 \leq_{\mathbf{P}} q_2)}$$