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:

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