

Definition (Uncertainty endofunctor). ««««< HEAD ===== >>>>> 71b945628cbec0b6db483f3019969f9faafed504

The *uncertainty endofunctor* $\mathbf{Unc} : \mathbf{DP} \rightarrow \mathbf{DP}$ is defined as follows:

1. It maps an object \mathbf{P} in \mathbf{DP} (poset) to its poset of intervals $\mathbf{Int}(\mathbf{P})$.
2. It maps a morphism in \mathbf{DP} $\mathbf{d} : \mathbf{F} \rightarrow \mathbf{R}$ to $\mathbf{Unc}(\mathbf{d})$, where:

$$\mathbf{Unc}(\mathbf{d}) : \mathbf{Int}(\mathbf{F})^{\text{op}} \times \mathbf{Int}(\mathbf{R}) \rightarrow_{\mathbf{Pos}} \mathbf{Bool}$$

$$\langle [f_L, f_U]^*, [r_L, r_U] \rangle \mapsto \mathbf{d}(f_L^*, r_L) \wedge \mathbf{d}(f_U^*, r_U).$$