

**Lemma.** There is a functor  $\text{FixResMaxFunBack} : \mathbf{Pos}_{\mathcal{L}} \rightarrow \mathbf{DP}$  which maps:

1. An object (poset) in  $\mathbf{Pos}_{\mathcal{U}}$  to the same object (poset) in  $\mathbf{DP}$ .
2. A morphism  $g \in \text{Hom}_{\mathbf{Pos}_{\mathcal{L}}}(\mathbf{F}; \mathbf{R})$  to the morphism  $\mathbf{d}_g \in \text{Hom}_{\mathbf{DP}}(\mathbf{F}; \mathbf{R})$ ,  
where:

$$\mathbf{d}_g : \mathbf{F}^{\text{op}} \times \mathbf{R} \rightarrow_{\mathbf{Pos}} \mathbf{Bool}$$

$$\langle f^*, r \rangle \mapsto f \in g^{\star}(r).$$