

Show that theorem 3.4.4 is equivalent to the monadicity of the functor $G^+ : \text{Comp}^+ \rightarrow \text{Set}^+$ described below.

- Let Comp^+ be the category of pairs (X, \mathcal{F}) , where X is a compact Hausdorff space and \mathcal{F} is a sheaf on X , with morphisms from (X, \mathcal{F}) to (X', \mathcal{F}') given by continuous functions $f : X \rightarrow X'$ together with a map of sheaves $f^* : \mathcal{F}' \rightarrow \mathcal{F}$ on X .
- Let Set^+ be the category of pairs (X, \mathcal{F}) , where X is a set with the discrete topology and \mathcal{F} is a sheaf on X , with morphisms defined as for Comp^+ .
- We define the functor $G^+ : \text{Comp}^+ \rightarrow \text{Set}^+$ by sending (X, \mathcal{F}) to $(X^{\text{disc}}, \mathcal{F}|_{X^{\text{disc}}})$, where X^{disc} denotes the underlying set of X with the discrete topology and $\mathcal{F}|_{X^{\text{disc}}}$ denotes the pullback of \mathcal{F} to X^{disc} .