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COMPACTIFICATION OF κ -FRAMES

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ABSTRACT. In this paper we show that the category $\mathbf{KR}\kappa\mathbf{Frm}$, of all compact regular κ -frames and κ -frame homomorphisms, is a coreflective subcategory of the category $\kappa\mathbf{Frm}$, of all κ frames and κ -frame homomorphisms. Then, a compactification for any completely regular κ -frame and any proximal κ frame is given. The theory of κ -frames was introduced by Madden [3].

1. Background

Here we recall some notions and notations from [2], [4].

1.1 Let κ be any regular cardinal. A κ -set is a set of cardinality strictly less than κ . A κ -frame is a bounded lattice L which has joins of κ -subsets and satisfies the distributive law:

$$x \land \bigvee S = \bigvee \{x \land s : s \in S\}$$

for $x \in L$ and S a κ -subset of L. A κ -frame homomorphism h: $L \to M$ is a lattice homomorphism preserving joins of κ -subsets. The resulting category is denoted by κ **Frm**. The theory of κ -frames was introduced by Madden [3].

Keywords: Compact regular $\kappa\text{-}{\rm frame},$ Completely regular ideal, Strongly regular ideal, Compactification, Proximal $\kappa\text{-}{\rm frame}$

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