SOME PROPERTIES OF COVARIANT FUNCTORS ON THE CATEGORY *Comp*

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In this note, we consider covariant functors in the categories of $Comp-$compact spaces, Metr-metrizable spaces, S-stratifiable spaces, $\aleph-$spaces, paracompact p-spaces, and continuous self-maps. It is proved that functors with finite supports acting in certain categories preserve finite-dimensional spaces and weakly countable spaces. Closed functors with finite support are defined and it is proved that closed functors preserve the class of S-spaces.

Recall the definition and some normality properties of a covariant functor $F: Comp \to Comp$ acting in the category of compact sets. The functor F is said to be:

Stores the empty set and point if $F(\varnothing)=\varnothing$ and $F(\{1\})=\{1\}$ where $\{k\}, k\geq 0$ we denote the set of non-negative integers - $\{0,1,...,k-1\}$ less than k. In this terminology $\{0\}=\varnothing$;

Monomorphic if for every (topological) embedding. $f: A \to X$ the mapping $F(f): F(A) \to F(X)$ is an embedding.

Epimorphic if, for every mapping $f: A \to Y$ onto Y, the mapping $F(f): F(A) \to F(Y)$ is also a mapping "to"";

Preserves intersections if for any family $\{A_\alpha : \alpha \in A\}$ of closed subsets of X and identical embeddings $i_\alpha : A_\alpha \to X$, mapping $F(i_\alpha): \bigcap\{F(A_\alpha): \alpha \in A\} \to X$ defined by $F(i)(\alpha) = F(i_A)(\alpha)$, is an embedding for every $\alpha \in A$;

Pre-images if for every mapping $f: X \to Y$ and every closed set $A \subset Y$ the mapping $F(f|_{f^{-1}(A)})(f^{-1}(A)) \to F(A)$ is a homeomorphism;

Preserves weight if $\omega(F(X)) = \omega(X)$ for an infinite compact space X;

Continuous if for every inverse spectrum $S=\{X_\alpha; \pi_\beta^\alpha : \alpha \in A\}$ from bicompacta, a homeomorphism is a mapping $f: F(\lim S) \to \lim F(S)$ which is the limit of mappings $F(\pi_\alpha)$ if $\pi_\alpha : \lim S \to X_\alpha$-through projections of the S spectrum.

In what follows, we assume that all functors under consideration are monomorphic and preserve intersections. We also assume that all functors preserve non-empty spaces. This restriction is not essential, since by doing so we exclude from consideration only the empty