SOME CATEGORICAL CONSTRUCTIONS

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Abstract. In the category $\mathcal{C}_2\mathcal{V}$ of the local convex topological vectorial Hausdorff spaces, for an reflector functor $l : \mathcal{C}_2\mathcal{V} \to \mathcal{L}$ or one coreflector $k : \mathcal{C}_2\mathcal{V} \to \mathcal{K}$ let $\varepsilon\mathcal{L} = \{e \in \mathcal{E}pi \mid l(e) \in \mathcal{I}so\}$, and $\mu\mathcal{K} = \{m \in \mathcal{M}ono \mid k(m) \in \mathcal{I}so\}$ be. For a class of bimorphisms $\mathcal{B}$, let $\mathbb{R}^S(\mathcal{B})$ be the class of reflective subcategories closed in relation to $\mathcal{B}$-subobjects.

Theorem 1. *May the $\mathcal{L}$ contains the $\mathcal{S}$ subcategory of the spaces with weak topology, and $\mathcal{R}$ contains the Γ_0 subcategory of the complete spaces. Then $\mathcal{R} \in \mathbb{R}^S(\varepsilon\mathcal{L})$.*

Theorem 2. *Let $\mathcal{K}$ be a coreflective subcategory, $\tilde{\mathcal{M}}$ - the coreflective subcategory of the topological Mackey spaces. If $\tilde{\mathcal{M}} \subset \mathcal{K}$ or $\mathcal{S} \subset \mathcal{L}$, then the right product $\mathcal{K} *_d \mathcal{L}$ belongs to the class $\mathbb{R}^S(\mu\mathcal{K})$: $\mathcal{K} *_d \mathcal{L} \in \mathbb{R}^S(\mu\mathcal{K})$.*

Let $\mathcal{R}$ be a reflective subcategory, and $\mathcal{A} \subset \mathcal{C}_2\mathcal{V}$. Denote by $\lambda_{\mathcal{R}}(\mathcal{A})$ the full subcategory of all objects $Z \in |\mathcal{C}_2\mathcal{V}|$ with the property: for any $A \in |\mathcal{R}|$ all morphism $f : A \to Z$ extend through $\mathcal{R}$-replica of A: $f = g \cdot r^A$, for an g.

Theorem 3. *Let $\mathcal{R} \in \mathbb{R}^S(\mu\mathcal{K})$, and $\mathcal{A} \subset \mathcal{C}_2\mathcal{V}$ be. Then $\lambda_{\mathcal{R}}(\mathcal{A}) \in \mathbb{R}^S(\mu\mathcal{K})$*

Theorem 4. *Let be reflector functor $l : \mathcal{C}_2\mathcal{V} \to \mathcal{L}$ exactly to the left, $\mathcal{S} \subset \mathcal{L}$, and $\mathcal{R}$ a reflective subcategories. Then the semireflexive product $\mathcal{L} *_{sr} \mathcal{R}$ belongs to the class $\mathbb{R}^S(\varepsilon\mathcal{L})$: $\mathcal{L} *_{sr} \mathcal{R} \in R^S(\varepsilon\mathcal{L})$.*