CATEGORIES OF SYNTOPOGENOUS SPACES

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This thesis concerns with categorical properties of the following three categories and their subcategories: the category ST of semi-topogenous spaces and continuous maps, the category Syn of syntopogenous spaces and continuous maps and category $OSyn$ of ordered syntopogenous spaces and continuous isotones.

We show that they are all topological categories and that ST contains the category IST of interpolation semi-topogenous spaces as a bireflective subcategory.

Using limit-operators, we characterize coreflective subcategories of ST, IST and Syn and then show that each of Top, $Prox$, $Qunif$, $Qord$ and $Equiv$ is isomorphic with some coreflective subcategory of Syn.

It is shown that a completely regular syntopogenous space is compact iff every maximal completely regular filter on the space is convergent.

The category Syn is shown to be isomorphic with the bireflective hull of the real line $(R, \boldsymbol{R}, \leqq)$ in $OSyn$. Introducing a concept of feebly a-convex syntopogenous spaces, we show that they form a bireflective subcategory of $OSyn$.

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