

Characterization of some types of compactness and construction of index compactness $\leq \tau$ extensions by means of uniform structures

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Abstract: In his work [1] M. Stone noted that one of the interesting and difficult problems of General Topology is the study of all extensions of a given topological space. B. Banashevsky [2] systematized the general problems of the theory of extensions.

As is known, on every Lindelof space X is its universal uniform structure U is complete. If X_0 is all-density subspace of the space X and U_0 is a uniform structure on X_0 induced by the uniform structure of U , then the uniform space (X, U) is completion of (X_0, U_0) . A uniform structure U_0 is not necessarily a universal uniform structure, but it has the special property of pre-Lindelof, and pre-Lindelof uniform structures of the space X_0 it is possible to construct all its Lindelof extensions, considering these extensions as completions of the space X_0 through to pre-Lindelof uniform structures.

In this work, through the uniform structures, the index compactness $\leq \tau$ extensions is constructed, which generalizes all Lindelof extensions, with the help of uniform structures such important compact types of topological spaces as compact, μ -compact and Lindelof spaces, also study some compact and Lindelof properties of remainders of topological spaces by means of coverings.

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