ON SOME CHARACTERIZATION OF SUPERPARACOMPACTNESS, STRONG PARACOMPACTNESS AND COMPLETE PARACOMPACTNESS

I.N. Tillabaev
Namangan State University, Namangan, Uzbekistan

In this paper, we study uniform analogs of complete paracompactness [1] strong paracompactness [2], and superparacompactness [3].

Definition 1 (D.K.Musaev). (i) A star finite (finite-component) U -locally finite [4] cover ! of a uniform space (X,U) is said to be uniformly star-finite (respectively, uniformly finite-component); (ii)

A _− star-finite [3] (in particular, _− finite -component [3]) U -locally finite cover _ of a uniform space (X,U) is said to be uniformly_− star-finite (respectively, uniformly _− finite-component); (iii)

A cover of a uniform space (X,U) wich can be represented as a countable family of uniformly star-finite (uniformly finite-component) covers is said to be _− uniformly star-finite (respectively, _− uniformly finite-component).

Proposition 1. If a uniformly space (X,U) is R -superparacompact (R -strong paracompact, R-completely paracompact). Moreover, if X is a superparacompact Hausdorff space (strongly paracompact Hausdorff space) and U_ is its universal uniformity, then the uniform space (X,U_) is R –super paracompact (respectively,R -strongly paracompact).

Proposition 2. For a uniform space (X,U), the following conditions (a1), (b1), (c1), and (d1) are equivalent to conditions (a2), (b2), (c2), and (d2), respectively:(a1) (X,U) is R -paracompact; (a2) any finitely additive [4] open cover of (X,U) has a U -locally finite open refinement; (b1) (X,U) is R-completely paracompact; (b2) any finitely additive open cover of (X,U) has a uniform _− star-finite open weak refinement;(c1) R -strongly paracompact; (c2) any finitely additive open cover of (X,U) has a uniform star-finite open refinement;(d1) (X,U) is R -superparacompact; (d2) any finitely additive open cover of (X,U) has a uniform finite-component open refinement.

Theorem 1. For a uniform space (X,U) , the following conditions (a1) and (b1) are equivalent to conditions (a2), and (b2), respectively:(a1) the space (X,U) is uniformlyR -superparacompact; (a2) the space (X,U) is uniformlyR -paracompact and (X, _u) is superparacompact;(b1) the space (X,U) is uniformlyR -strongly paracompact; (b2) the space (X,U) is uniformly R -paracompact and (X, _u) is

strongly paracompact.

Theorem 2. Let(X,U) be uniform space and let bX be a compact Hausdorff extension of X.Then the following conditions are equivalent: (a) (X,U) is R -superparacompact; (b) for any compact space K _ bX\X, there exists a U-locally finite disjoint open cover _ of (X,U) which punctures the compact set K inbX . Proposition 3. Any uniformly zero-dimensional R -paracompact space is R-super paracompact.

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