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Spaces with star countable extent

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Abstract: For a topological property P , we say that a space X is star P if for every open cover \mathcal{U} of the space X there exists $A \subset X$ such that $st(A, \mathcal{U}) = X$. We consider space with star countable extent establishing the relations between the star countable extent property and the properties star Lindelöf and feebly Lindelöf. We describe some classes of spaces in which the star countable extent property is equivalent to either the Lindelöf property or separability. An example is given of a Tychonoff star Lindelöf space with a point countable base which is not star countable.

Keywords: extent; star properties; star countable spaces; star Lindelöf spaces; feebly Lindelöf spaces

AMS Subject Classification: 54D20, 54C10, 54B10, 54B05

REFERENCES

- [1] Alas O.T., Junqueira L.R., Wilson R.G., *Countability and star covering properties*, Topology Appl. **158** (2011), no. 4, 620–626.
- [2] Alas O.T., Junqueira L.R., van Mill J., Tkachuk V.V., Wilson R.G., *On the extent of star countable spaces*, Cent. Eur. J. Math. **9** (2011), no. 3, 603–615.
- [3] Arhangel'skii A.V., Buzyakova R.Z., *Additions theorems and D -spaces*, Comment. Math. Univ. Carolin. **43** (2002), no. 4, 653–663.
- [4] Creede G., *Concerning semistratifiable spaces*, Pacific J. Math. **32** (1970), 47–54.
- [5] van Douwen E., Reed G.M., Roscoe A.W., Tree I.J., *Star covering properties*, Topology Appl. **39** (1991), 71–103.
- [6] Hiremath G.R., *On star with Lindelöf center property*, J. Indian Math. Soc. **59** (1993), 227–242.
- [7] Kuratowski K., *Topology*, Vol. I, Academic Press, New York-London, 1966.
- [8] Matveev M.V., *A survey on star covering properties*, Topology Atlas, 1998, preprint no. 330.
- [9] van Mill J., Tkachuk V.V., Wilson R.G., *Classes defined by stars and neighbourhood assignments*, Topology Appl. **154** (2007), no. 10, 2127–2134.
- [10] Pixley C., Roy P., *Uncompletable Moore spaces*, Proceedings of the Auburn Topology Conference (Auburn Univ., Ala., 1969), Auburn University, Ala., 1969, pp. 75–85.
- [11] Shakhmatov D.B., *On pseudocompact spaces with point-countable base*, Dokl. Akad. Nauk SSSR **30** (1984), no. 3, 747–751.
- [12] Song Y.K., *On relative star-Lindelöf spaces*, New Zealand J. Math. **34** (2005), 159–163.
- [13] Song Y.K., *On L -starcompact spaces*, Czechoslovak Math. J. **56(2)** (2006), 781–788.