

ON THE CARDINALITY OF ALMOST DISCRETELY LINDELÖF SPACES AND ... SOMETHING ELSE

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ABSTRACT. We prove that every almost discretely Lindelöf first-countable Hausdorff space has cardinality at most continuum in ZFC, thus completely answering Question 4.5 from [2] and a question implicitly asked in [1].

A space is defined to be *almost discretely Lindelöf* [2] if for every discrete set $D \subset X$ there is a Lindelöf subspace L of X such that $D \subset L$.

We also present further extensions of Arhangel'skiĭ's inequality and formulate some questions.

1. I. Juhász, Z. Szentmiklóssy and L. Soukup, *First-countable and almost discretely Lindelöf T_3 spaces have cardinality at most continuum*, *arXiv:1612.06651*.
2. I. Juhász, V.V. Tkachuk and R.G. Wilson, *Weakly linearly Lindelöf monotonically normal spaces are Lindelöf*, *preprint, arXiv:1610.04506*.

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