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Mathematics > General Topology

For Hausdorff spaces, \$H\$-closed = \$D\$-pseudocompact for all ultrafilters \$D\$

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We prove that, for an arbitrary topological space \$X\$, the following two conditions are equivalent: (a) Every open cover of \$X\$ has a finite subset with dense union (b) \$X\$ is \$D\$-pseudocompact, for every ultrafilter \$D\$. Locally, our result asserts that if \$X\$ is weakly initially \$\lambda\$-compact, and \$2^ \mu \leq \lambda \$, then \$X\$ is \$D\$-\brfrt pseudocompact, for every ultrafilter \$D\$ over any set of cardinality \$ \leq \mu\$. As a consequence, if \$2^ \mu \leq \lambda \$, then the product of any family of weakly initially \$\lambda\$-compact.

Comments:v. 2: added some results, some remarks, various minor
improvements. 7 pages. v. 1: 4 pagesSubjects:General Topology (math.GN)MSC classes:54D20, 54B10, 54A20Cite as:arXiv:1107.1435 [math.GN]
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