

Notes on the od-Lindelöf property

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A space is od-compact (resp. od-Lindelöf) provided any cover by open dense sets has a finite (resp. countable) subcover. We first show with simple examples that these properties behave quite poorly under finite or countable unions. We then investigate the relations between Lindelöfness, od-Lindelöfness and linear Lindelöfness (and similar relations with 'compact'). We prove in particular that if a T_1 space is od-compact, then the subset of its non-isolated points is compact. If a T_1 space is od-Lindelöf, we only get that the subset of its non-isolated points is linearly Lindelöf. Though, Lindelöfness follows if the space is moreover locally openly Lindelöf (i.e. each point has an open Lindelöf neighborhood).

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