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Notes on the od-Lindelöf property

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A space is od-compact (resp. od-Lindel\"of) 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 Lindel\"ofness, od-Lindel\"ofness and linear Lindel\"ofness (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-Lindel\"of, we only get that the subset of its non-isolated points is linearly Lindel\"of. Though, Lindel\"ofness follows if the space is moreover locally openly Lindel\"of (i.e. each point has an open Lindel\"of neighborhood).

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