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Weak orderability of some spaces which admit a weak selection

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Abstract: We show that if a Hausdorff topological space X satisfies one of the following properties:

a) X has a countable, discrete dense subset and X^2 is hereditarily collectionwise Hausdorff;

b) X has a discrete dense subset and admits a countable base;

then the existence of a (continuous) weak selection on X implies weak orderability.

As a special case of either item a) or b), we obtain the result for every separable metrizable space with a discrete dense subset.

Keywords: weak (continuous) selection, weak orderability, Vietoris topology, dense countable subset, isolated point, countable base, collectionwise Hausdorff space

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