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Internal characterization of fragmentable spaces. (English) Zbl 0645.46017

Mathematika 34, No. 2, 243-257 (1987).

Let X be a topological space and let ρ be a metric on $X \times X$. X is said to be fragmented by the metric ρ if for every $\epsilon > 0$ and each nonempty subset Y of X there is a nonempty relatively open subset U of Y such that ρ-diam(U)$\leq \epsilon$ [*J. E. Jayne* and *C. A. Rogers*, Acta Math. 155, 41-79 (1985; Zbl 0588.54020)]. The author shows that X is fragmentable if and only if X admits a separating σ-relatively open partitioning. This characterisation is used to prove the main result (Theorem 3.1): Let X be a Hausdorff compact space which is fragmented by a metric. Then $C(X)^*$ endowed with the weak star topology is a framentable space. Consequently (Corollary 3.6) C(X) is a weak Asplund space.

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MSC:

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