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Articles of (and about)

Baumgartner, James E.; Erdős, Paul; Higgs, D.

Cross-cuts in the power set of an infinite set. (In English)

Order 1, 139-145 (1984). [0167-8094]

Authors' abstract: "In the power set P(E) of a set E, the sets of a fixed finite cardinality k form a "cross-cut", that is, a maximal unordered set C such that if $X,Y\subseteq E$ satisfy $X\subseteq Y$, $X\subseteq \text{some }X'$ in C, and $Y\supseteq \text{some }Y'$ in C, then $X\subseteq Z\subseteq Y$ for some Z in C. For $E=\omega$, ω_1 and ω_2 , it is shown with the aid of the continuum hypothesis that P(E) has cross-cuts consisting of infinite sets with infinite complements, and somewhat stronger results are proved for ω and ω_1 ."

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Classification:

04A20 Combinatorial set theory

06A06 Partial order

04A30 Continuum hypothesis and generalizations

Keywords:

power set; sets of a fixed finite cardinality; cross-cut; maximal unordered set; continuum hypothesis