

**Zbl 638.05030**

**Erdős, Paul; Sós, V.T.**

*Problems and results on intersections of set systems of structural type.* (In English)

**Util. Math. 29, 61-70 (1986). [0315-3681]**

For a fixed family  $\mathcal{J}$  of subsets of a set  $S$  of cardinality  $n$ ,  $g(n, \mathcal{J})$  denotes the cardinality of the largest family  $\mathcal{A}$  of subsets of  $S$  whose pairwise intersections are all contained in  $\mathcal{J}$ ;  $f(n, \mathcal{J})$  denotes the largest family  $\mathcal{A}$  whose pairwise intersections all contain an element of  $\mathcal{J}$ . Problems involving these functions are called, respectively, strong and weak intersection problems.

The authors review intersection problems for subsets of the integers, (ordinary) graphs, and (uniform) hypergraphs. A number of open problems are discussed. (This useful paper is in the genre popularized by the first author, which has, over the years, enticed many mathematicians into fertile areas of combinatorics and related fields. It is unfortunate that the journal editors did not see fit to have the paper properly proofread. There are numerous typos that could easily have been eliminated. In particular, underscoring that was evidently intended by the authors as printers' instructions has been set in type - erratically - to add to the confusion.)

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Classification:

05C35 Extremal problems (graph theory)

05A05 Combinatorial choice problems

05C65 Hypergraphs

05C15 Chromatic theory of graphs and maps

05C38 Paths and cycles

00A07 Problem books

Keywords:

set system; strong intersection problem; weak intersection problem; arithmetic progressions; C-intersection systems; delta-systems; chromatic number; Turán graph; 5-wheel