

Zbl 725.05051

Erdős, Paul

Problems and results on graphs and hypergraphs: Similarities and differences.

(In English)

Mathematics of Ramsey theory, Coll. Pap. Symp. Graph Theory, Prague/Czech., Algorithms Comb. 5, 12-28 (1990).

[For the entire collection see Zbl 715.00011.]

Many papers and also the excellent book of *B. Bollobas* [Extremal graph theory (1978; Zbl 419.05031)] discussed the extremal problems on graphs. But much fewer papers have appeared on extremal problems on hypergraphs. In this survey, which is written in the classical Erdős style, the author discusses and suggests many selected extremal problems on graphs and hypergraphs. He tries to emphasize the new difficulties arising in the study of hypergraphs. In the five chapters of this paper the author deals successively with classical extremal problems of Turan type, density problems, Ramsey's theorem, Ramsey-Turan type problems, and problems about chromatic numbers of graphs and hypergraphs. The paper is very interesting and challenging, especially to hypergraph researchers.

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Classification:

05C35 Extremal problems (graph theory)

05-02 Research monographs (combinatorics)

00A07 Problem books

05C65 Hypergraphs

05D10 Ramsey theory

05C55 Generalized Ramsey theory

Keywords:

extremal problems on graphs; extremal problems on hypergraphs; survey; density problems; Ramsey's theorem; Ramsey-Turan type problems; chromatic numbers