

Zbl 277.05135

**Bollobás, Béla; Erdős, Paul**

*On the structure of edge graphs.* (In English)

**Bull. Lond. Math. Soc.** **5**, 317-321 (1973). [0024-6093]

Let  $K_r(t)$  be a graph with  $r$  groups of  $t$  vertices, each two vertices of which are connected iff they belong to different groups. denote  $g(n, r, \epsilon)$  the minimal such  $t$  that any graph with  $n$  vertices and  $m = \lceil ((r-2)/2(r-1) + \epsilon)n^2 \rceil$  edges contains a  $K_r(t)$ , ( $\epsilon > 0$ ). In this article it is proved that for any  $r$  and  $0 < \epsilon < 1/2(r-1)$  there exist constants  $c_1, c_2$  such that  $c_1 \log n \leq g(n, r, \epsilon) \leq c_2 \log n$  for sufficiently large  $n$  and  $c_2 \rightarrow 0$  if  $\epsilon \rightarrow 0$ .

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Classification:

05C35 Extremal problems (graph theory)

05C99 Graph theory