

Zbl 103.16302

**Erdős, Pál; Rényi, Alfréd**

*On the strength of connectedness of a random graph* (In English)

**Acta Math. Acad. Sci. Hung. 12, 261-267 (1961). [0001-5954]**

Using the notation of the paper reviewed above the following theorem is proved:  
If  $N(n) = \frac{1}{2}n \log n + \frac{1}{2}rn \log \log n + \alpha n + o(n)$ , where  $\alpha$  is a real constant and  $r$  a non-negative integer, then

$$\lim_{n \rightarrow +\infty} \Pr(c_i(\Gamma_{n, N(n)}) = r) = 1 - \exp(-e^{-2\alpha}/r!),$$

where  $i = 1, 2, 3$  and  $c_1(G)$  denotes the minimal number of all edges starting from a single point in a given graph  $G$ ,  $c_2(G)$  or  $c_3(G)$  denotes the least number  $k$  such that by deleting  $k$  appropriately chosen points or edges the resulting graph is disconnected (if  $G$  is complete with  $n$  points one puts  $c_2(G) = n - 1$ ).

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Classification:

05C40 Connectivity

05C80 Random graphs