Arratia, Richard; Liggett, Thomas M.

How likely is an LLD degree sequence to be graphical? (English) Zbl 1079.05023

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Let $D(1), \dots, D(n)$ be a sequnce of independent identically distributed positive integer-valued random variables, and let $P(n)$ be the probability that the sequence is graphical, i.e. that there is a simple graph on n vertices with degrees given by the n values in the sequence. By investigating the limit of $nP(D(i) > n-1)$ as n tends to infinity, sufficient conditions are obtained that $P(n)$ has a limit 0 or 1/2 or strictly in between. The proof is based on a representation of order statistics by unit exponential random variables.

Reviewer: Ove Frank (Stockholm)

MSC:

05C07 Vertex degrees
05C80 Random graphs (graph-theoretic aspects)
60G70 Extreme value theory; extremal stochastic processes

Keywords:

degree distributions; graphical sequences; order statistics

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