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First Passage Properties of the Erdős-Renyi Random Graph VISHAL SOOD, CNLS Los Alamos National Laboratory, SIDNEY REDNER, CNLS LANL, Los Alamos NM 87545, USA, DANI BEN-AVRAHAM, Department of Physics, Clarkson University, Postdam NY 13699, USA — We study the first-passage properties of the Erdős-Renyi random graph. Using an effective medium approximation we find that the mean-first-passage time between pairs of nodes is insensitive to the fraction p of occupied links. This prediction is tested by numerical simulation. However, the inverse first moment exhibits non-monotonic behavior with p near the percolation transition that can be understood on physical grounds.

Prefer Oral Session
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