Hamilton cycles in random subgraphs of Dirac graphs

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Abstract

Given a graph $\Gamma = (V, E)$ on n vertices, we define the Erdős-Rényi graph process with host Γ as the process obtained by revealing one edge of Γ at a time. We show that if Γ has minimum degree at least $n/2$ and every vertex set of size $n/2$ contains $\Omega(n^2)$ edges, then with high probability the process becomes Hamiltonian exactly when its minimum degree becomes 2.