

k -regular subgraphs near the k -core threshold of a random graph

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Abstract

We prove that $G_{n,p=c/n}$ whp has a k -regular subgraph if c is at least $e^{-\Theta(k)}$ above the threshold for the appearance of a subgraph with minimum degree at least k ; i.e. an non-empty k -core. In particular, this pins down the threshold for the appearance of a k -regular subgraph to a window of size $e^{-\Theta(k)}$.

This is a joint work with Dieter Mitsche and Paweł Prałat; see arXiv:1804.04173