1113-05-68 **Victor Falgas-Ravry*** (victor.falgas-ravry@vanderbilt.edu), **Klas Markström** and **Jacques Verstraëte**. *Full subgraphs of a graph.*

Let G be an n-vertex graph with edge-density p. Following Erdős, Łuczak and Spencer, an m-vertex subgraph H of G is called *full* if it has minimum degree at least $p(m-1)$. Let $f(G)$ denote the order of a largest full subgraph of G, and let $f_p(n)$ denote the minimum of $f(G)$ over all n-vertex graphs G with edge-density p.

We show that for $p:\ n^{-\frac{1}{3}} < p < 1-n^{-\frac{1}{5}}$, the function $f_p(n)$ is of order at least $(1-p)^{\frac{1}{3}}n^{\frac{2}{3}}$, improving on a lower bound of Erdős, Łuczak and Spencer in the case $p=\frac{1}{2}$ and extending work of Erdős, Faudree, Jagota and Łuczak. Moreover we show that this bound is tight: for infinitely many p near the elements of $\{\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \ldots\}$ we have $f_p(n) = \theta(n^{\frac{2}{3}})$.

As an ingredient of the proof, we show that every graph G on n vertices has a subgraph H on m vertices with $\lfloor \frac{n}{r} \rfloor \leq m \leq \lceil \frac{n}{r} \rceil + 1$ such that for every vertex $v \in V(H)$ the degree of v in H is at least $\frac{1}{r}$ times its degree in G. Finally, we discuss full subgraphs of random and pseudorandom graphs, and introduce several open problems. (Received August 10, 2015)