Resilience of almost-perfect H-packing

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For given graphs H and G, H-packing in G is a union of vertex disjoint copies of H in G. Conlon, Gowers, Samotij, and Schacht showed that for a constant $\gamma > 0$, there exists $C > 0$ such that if $p \geq Cn^{-1/m_2(H)}$ then a.a.s. spanning subgraph G of the random graph $G(n,p)$ with minimum degree at least $(1 - 1/\mathrm{crc}(H) + \gamma)np$ contains an H-packing that covers all but at most gamma n vertices. Here, $\mathrm{crc}(H)$ denotes the critical chromatic threshold, a parameter introduced by Komlós and $m_2(H)$ is a certain density measure of H. We show that this theorem can be bootstraped to obtain an H-packing covering all but at most gamma $(C/p)^{m_2(H)}$ vertices, which gives a sublinear leftover when $p \gg n^{-1/m_2(H)}$. In the case where H is a triangle this answers the question of Balogh, Lee, and Samotij. Furthermore, we give an upper bound on the size of an H-packing for certain ranges of p. The talk is based on a joint work with Rajko Nenadov.