

The greedy independent set in a random graph with given  
degrees

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Consider a random graph with given vertex degrees, and construct an independent set via a simple greedy algorithm: order the vertices arbitrarily, and, for each vertex in turn, place it in the independent set unless it is adjacent to some vertex already chosen.

We show that the proportion of vertices in the resulting independent set converges in probability to a constant (the *jamming constant*) as the size of the graph tends to infinity, under suitable technical assumptions.

The jamming constant is given by an integral whose upper limit is defined implicitly; the integral can be calculated explicitly in simple cases.

This is joint work with Graham Brightwell and Malwina Luczak.