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Analysis of the 2Greedy Algorithm on Random Graphs with Fixed Degree Sequence

2Greedy is a simple greedy algorithm for finding a large 2-matching in a graph; that is, a spanning subgraph with maximum degree 2. Frieze introduced the algorithm and analyzed its performance on sparse random graphs conditioned to have minimum degree at least 3. We analyze the performance of 2Greedy on a graph chosen uniformly at random from the set of graphs having a specified degree sequence. We present a condition on the degree sequence which guarantees that the algorithm returns a 2-matching with $o(n)$ components whp. This is joint work with Patrick Bennett.