1119-05-160 **Michael Krivelevich** and **Po-Shen Loh*** (ploh@cmu.edu), Wean 6113, Dept of Math Sciences, Carnegie Mellon Universiy, Pittsburgh, PA 15213, and **Benny Sudakov**. *The matching-number process.*

The matching number of a graph G is the maximum number ν for which there exists a set of ν vertex-disjoint edges contained in G. Let the k-matching process on n vertices be defined as follows: generate a uniformly random permutation of the $\binom{n}{2}$ potential edges. Initially, start with n vertices and no edges. Process the potential edges one at a time, in the order that they appear in the permutation. If at a given iteration, the addition of that edge to the current graph would not increase its matching number above k, then add that edge. We prove that for $k = o(n)$, asymptotically almost surely this process terminates with a graph which consists of some k vertices that are adjacent to all other vertices (including each other), and nothing more. This precisely matches the extremal construction in the classical Erdős-Gallai bound on the maximum number of edges in an n-vertex graph with matching number at most k, in this regime $k = o(n)$.

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