1146-05-521 **He Guo*** (`he.guo@gatech.edu`), Room 117, Skiles Building, School of Mathematics, 686 Cherry Street, Georgia Institute of Technology, Atlanta, GA 30332, and **Lutz Warnke**. *Semi-random greedy independent set algorithm.*

The so-called random greedy ISET algorithm constructs an independent set in a given hypergraph $\mathcal{H}$ by iteratively adding random vertices to the independent set (to clarify: at each step one vertex is added uniformly at random from the collection of vertices that could be added to the current independent set). Assuming that the r-uniform N-vertex hypergraph $\mathcal{H}$ is D-regular, under suitable degree and codegree conditions Bennett and Bohman showed that this algorithm produces an independent set of size at least $\Omega\left(N\left(\frac{\log N}{D}\right)^{\frac{1}{r-1}}\right)$. By analyzing a semi-random variant of the random greedy ISET algorithm, we prove similar bounds under weaker technical assumptions on $\mathcal{H}$. For example, we only require a maximum degree D (instead of D-regular) condition. If time permits, we shall also discuss some applications in Ramsey theory and extremal graph theory.

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