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Lauren Keough*, lakeough@davidson.edu, and **Jamie Radcliffe**. *Maximizing 2-independent sets in 3-uniform hypergraphs*. Preliminary report.

There has been recent interest in extremal problems in which one maximizes the number of a certain substructure among graphs with some fixed parameters. For example, the Kahn-Zhao theorem gives an upper bound on the number of independent sets in d -regular graphs. It is an easy corollary of the Kruskal-Katona Theorem that, for any n and m , the lex graph maximizes the number of independent sets of each size among graphs with n vertices and m edges. We will extend extremal results about the number of independent sets to 3-uniform hypergraphs of fixed size and order. In hypergraphs we say a set of vertices, I , is j -independent if $|I \cap E| < j$ for any edge E . We answer the maximization question for 2-independent sets in 3-uniform hypergraphs with n vertices and m edges for particular values of n and m . (Received August 07, 2015)