

1125-05-920

Jessica Fuller* (jessica.fuller@emory.edu) and **Ronald J. Gould**. *Saturation and Constructing $(K_t - e)$ -saturated graphs*. Preliminary report.

Given a graph H , we say a graph G is *H -saturated* if G does not contain H as a subgraph and the addition of any edge $e' \notin E(G)$ results in H as a subgraph. The question of the minimum number of edges of an H -saturated graph on n vertices, known as the *saturation number*, and the question of the maximum number of edges possible of an H -saturated graph, known as the Turán number, has been addressed for many different types of graphs. We are interested in the existence of H -saturated graphs for each edge count between the saturation number and the Turán number. We prove that $(K_4 - e)$ -saturated graphs do not exist for small values of $|E(G)|$ and construct $(K_4 - e)$ -saturated graphs with $|E(G)|$ in the interval $[2n - 4, \lfloor \frac{n}{2} \rfloor \lceil \frac{n}{2} \rceil - n + 6]$. We then extend the $(K_4 - e)$ -saturated graphs to $(K_t - e)$ -saturated graphs. (Received September 13, 2016)