

1141-05-131

Jonathan Cutler* (jonathan.cutler@montclair.edu), **JD Nir** and **A. J. Radcliffe**.

Supersaturation for extremal enumeration.

Turán's theorem states that the maximum number of edges in K_{r+1} -free graph on n vertices is attained by the complete r -partite graph with part sizes as equal as possible. We write the number of edges in this graph as $\text{ex}(n, K_{r+1})$, the extremal number of K_{r+1} . Supersaturation in graphs asks if G has more than $\text{ex}(n, K_{r+1})$ edges, how many copies of K_{r+1} must G contain? Recently, Alon and Shikhelman introduced a generalization of the extremal number. Given graphs H and G , let $\text{ex}_G(n, H)$ be the maximum number of copies of G an H -free graph on n vertices can contain. It is natural to ask supersaturation questions in this context as well. We present some results in this area. (Received July 25, 2018)