

SATURATION SPECTRUM OF PATHS AND STARS

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Abstract

A graph G is H -saturated if H is not a subgraph of G but the addition of any edge from $\overline{G}$ to G results in a copy of H . The minimum size of an H -saturated graph on n vertices is denoted $\text{sat}(n, H)$, while the maximum size is the well studied extremal number, $\text{ex}(n, H)$. The saturation spectrum for a graph H is the set of sizes of H saturated graphs between $\text{sat}(n, H)$ and $\text{ex}(n, H)$. In this paper we completely determine the saturation spectrum of stars and we show the saturation spectrum of paths is continuous from $\text{sat}(n, P_k)$ to within a constant of $\text{ex}(n, P_k)$ when n is sufficiently large.

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