# 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 $\bar{G}$ to $G$ results in a copy of $H$. The minimum size of an $H$-saturated graph on $n$ vertices is denoted $\operatorname{sat}(n, H)$, while the maximum size is the well studied extremal number, ex $(n, H)$. The saturation spectrum for a graph $H$ is the set of sizes of $H$ saturated graphs between sat $(n, H)$ and 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 $\operatorname{sat}\left(n, P_{k}\right)$ to within a constant of ex $\left(n, P_{k}\right)$ when $n$ is sufficiently large.


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