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Bing Wei* (bwei@olemiss.edu). *Gallai-Ramsey numbers for some graphs with chromatic number three.*

A Gallai coloring of a complete graph is an edge-coloring such that no triangle has all its edges colored differently. A Gallai k -coloring is a Gallai coloring that uses k colors. Given a graph H and an integer $k \geq 1$, the Gallai-Ramsey number $GR_k(H)$ is defined to be the minimum integer n such that every Gallai k -coloring of the edges of K_n contains a monochromatic copy of H . In this talk, we investigate Gallai-Ramsey numbers for some graphs with chromatic number three such as \widehat{K}_m for $m \geq 2$, where \widehat{K}_m is a kipas with $m + 1$ vertices obtained from the join of K_1 and P_m , and a class of graphs with five vertices, denoted by \mathcal{H} . We first provide a general lower bound of such graphs and propose a conjecture for the exact value of $GR_k(\widehat{K}_m)$. Then we determine the Gallai-Ramsey numbers for many graphs in \mathcal{H} and obtain the exact value of $GR_k(\widehat{K}_4)$ for $k \geq 1$. Our outcomes not only indicate that the conjecture on $GR_k(\widehat{K}_m)$ is true for $m = 4$, but also imply several results on $GR_k(H)$ for some $H \in \mathcal{H}$ which are proved individually in different papers.

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