

Gallai-Ramsey numbers of C_{10} and paths of small order with multiple colors

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We study Ramsey-type problems in Gallai-colorings. Given a graph G and an integer $k \geq 1$, the Gallai-Ramsey number $gr_k(K_3, G)$ is the least positive integer n such that every k -coloring of the edges of the complete graph on n vertices contains either a rainbow triangle or a monochromatic copy of G . It turns out that $gr_k(K_3, G)$ behaves more nicely than the classical Ramsey number $r_k(G)$. However, finding exact values of $gr_k(K_3, G)$ is far from trivial. In this talk, we present our recent results on Gallai-Ramsey numbers of C_{10} and paths of order at most 10. We prove that for all $k \geq 1$, $gr_k(K_3, C_{10}) = gr_k(K_3, P_{10}) = 4k + 5$, and $gr_k(K_3, P_{2n+1}) = (n - 1)k + n + 2$ for all $n \in \{3, 4\}$.

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