Recent Results on Gallai-Ramsey Numbers of Cycles

Zi-Xia Song, Department of Mathematics, University of Central Florida

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 (that is, a triangle with all its edges colored differently) 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 survey recent results on Gallai-Ramsey numbers of graphs.

Keywords: Gallai-coloring, Gallai-Ramsey number, Ramsey number