

Gallai Ramsey number for K_4

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Given a graph H , the k -coloured Gallai Ramsey number $gr_k(K_3 : H)$ is defined to be the minimum integer n such that every k -colouring (using all k colours) of the complete graph on n vertices contains either a rainbow triangle or a monochromatic copy of H . Recently, Fox, Grinshpun, and Pach conjectured the value of the Gallai Ramsey numbers for complete graphs [2]. The case when $H = K_3$ was actually verified in 1983 by Chung and Graham [1]. We verify this conjecture for the first open case, when $H = K_4$. This is joint work with Colton Magnant and Akira Saito.

References

- [1] F. R. K. Chung and R. L. Graham, *Edge-colored complete graphs with precisely colored subgraphs*, *Combinatorica* **3** (3-4) (1983) 315–324.
- [2] J. Fox, A. Grinshpun, and J. Pach, *The Erdős-Hajnal conjecture for rainbow triangles*, *J. Combin. Theory Ser. B*, **111** (2015) 75–125.

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