

EDGE COLORING OF SIGNED CACTUS GRAPH

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Recently, Behr [?] introduced a notion of the chromatic index of signed graphs and proved that for every signed graph (G, σ) it holds that

$$\Delta(G) \leq \chi'(G, \sigma) \leq \Delta(G) + 1,$$

where $\Delta(G)$ is the maximum degree of G and χ' denotes its chromatic index.

In this presentation, we focus on signed cacti—connected graphs in which every edge belongs to at most one cycle. We prove that, except for an unbalanced cycle, all signed cacti possess a chromatic index $\chi'(G, \sigma)$ that remains unaffected regardless of the signature σ and is always equal to $\Delta(G)$.

References

- [1] R. Behr, Edge coloring signed graphs, *Discrete Mathematics* 343 (2) (2020) 111654.