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SOME RESULTS ON THE PALETTE INDEX OF SIERPIŃSKI-LIKE GRAPHS

A *proper edge coloring* of a graph G is a mapping $\alpha : E(G) \longrightarrow \mathbb{N}$ such that $\alpha(e) \neq \alpha(e')$ for every pair of adjacent edges e and e' in G. The *palette of a vertex v* of a graph G in a proper edge coloring is the set of colors assigned to the edges which are incident to v. The *palette index of G* is the minimum number of palettes occurring among all proper edge colorings of G. This parameter was introduced by Horňák, Kalinowski, Meszka, and Woźniak [1] in 2014. In this talk we discuss the palette index of Sierpiński-like graphs, namely Sierpiński graphs S_n and Sierpiński gasket graphs $S(n, k)$. In particular, we determine the exact value of the palette index of Sierpiński gasket graphs and Sierpiński graphs $S(n, 3)$. We also determine the palette index of Sierpiński graphs $S(n, k)$ where k is even, or $n = 2$ and $k = 4l + 3$. Additionally, we give an upper bound and a lower bound on the palette index of Sierpiński graphs $S(n, k)$.

References

[1] M. Horňák, R. Kalinowski, M. Meszka, M. Woźniak, *Minimum number of palettes in edge colorings*, Graphs and Combinatorics, 30, 2014, pp. 619–626.