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A NOTE ON UPPER BOUNDS FOR SOME GENERALIZED FOLKMAN NUMBERS

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Abstract

We present some new constructive upper bounds based on product graphs for generalized vertex Folkman numbers. They lead to new upper bounds for some special cases of generalized edge Folkman numbers, including the cases $F_e\big(K_3, K_4 - e; K_5\big) \leq 27$ and $F_e\big(K_4 - e, K_4 - e; K_5\big) \leq 51$. The latter bound follows from a construction of a K_5-free graph on 51 vertices, for which every edge coloring with two colors contains a monochromatic $K_4 - e$.

Keywords: Folkman number, Ramsey number.

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