

Edge coloring multigraphs

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Abstract

Let G be a loopless multigraph with maximum degree Δ . A famous conjecture from the 1970's, posed by Goldberg and (independently) Seymour, states that if G does not have an edge colouring with $\Delta + 1$ colours, then it contains a natural obstruction consisting of a vertex subset that induces too many edges to be coloured with $\Delta + 1$ colours. We discuss some relatively recent partial results related to this conjecture. One of the principal tools is an important method due to Tashkinov, called the method of *Tashkinov trees*, which is a sophisticated generalization of the method of alternating paths.