



SEMINARIUM MATEMATYKA DYSKRETNA

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GENERALISED TOTAL CHROMATIC NUMBER OF DEGENERACY GRAPHS

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The total generalised (P, Q) -colourings are colourings of the vertices and of the edges of graphs satisfying the following conditions:

- each set of vertices of the graph which receive the same colour induces a graph possessing prescribed property P ,
- each set of edges of the graph which receive the same colour induces a graph possessing prescribed property Q , and
- incident elements receive different colours.

In our contribution we shall deal with a specific situation when the properties P and Q are “to be k -degenerate”. Bounds for the least number of colours with which this can be done for all k -degenerate graphs are obtained. Moreover we shall discuss some applications for a communication in Wireless Sensor Networks.

References

- F. Galčík, G. Semanišin, Centralized broadcasting in radio networks with k -degenerate reachability graphs, in: ITAT 2006 Information Technologies – Applications and Theory, Bystrá dolina, Slovakia, 2006, pp. 41–46.
- I. Broere, G. Semanišin, Some bounds on the generalised total chromatic number of degenerate graphs, Inform. Proc. Letters 122 (2017) 30–33, <http://dx.doi.org/10.1016/j.ipl.2017.02.008>