



## SEMINARIUM MATEMATYKA DYSKRETNA

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### On list extensions of the majority edge colourings

Paweł Pękała  
WMS AGH

A *majority edge-colouring* of a graph  $G$  is a colouring of the edges of  $G$  such that for each vertex  $v$  of  $G$ , at most half the edges incident with  $v$  have the same colour. More generally, for a natural number  $k \geq 2$ , a  *$1/k$ -majority edge-colouring* of a graph is a colouring of the edges of  $G$  such that for every colour  $i$  and every vertex  $v$  of  $G$  at most  $1/k$  of the edges incident with  $v$  have the colour  $i$ . This notion was introduced recently by Bock, Kalinowski, Pardey, Piłśniak, Rautenbach and Woźniak.

We consider the list version of  $1/k$ -majority edge-colourings. In particular, we provide an upper bound on the minimum degree of a graph which necessitates the existence of a  $1/k$ -majority edge-colouring from lists of size  $k + 1$ . In addition, we investigate possible list extensions of generalised majority edge colourings of graphs and provide several results concerning these.

This is a joint work with Jakub Przybyło.