Meeting: 1006, Lubbock, Texas, SS 12A, Special Session on Graph Theory

1006-05-80 **Saad I El-Zanati**, **Heather Gavlas**, **Mike Plantholt** and **Papa A Sissokho*** (psissok@ilstu.edu), Math Department, Illinois State Univerrsity, 313 Stevenson Hall, Normal, IL 61790, and **Jozef Skokan**. *On minimum size edge-weightings inducing a proper vertex coloring.* Preliminary report.

Call a graph non-trivial if it is connected and has at least 3 vertices. In a recent article (JCTB 2004), Karonski, Luczak, and Thomasson raised the following

Question: Is it possible to weight the edges of any non-trivial graph with the integers 1, 2, and 3 such that if we color each vertex v of G by the sum of the weights of the edges incident with v then we obtain a proper coloring of G?

Karonski et al. showed–among other results–that the answer to the above question is positive for any non-trivial complete graph (i.e, of order at least 3) and for any non-trivial graph with (classical) chromatic number at most 3. In this talk, we will discuss the above question and present some new results. (Received February 07, 2005)