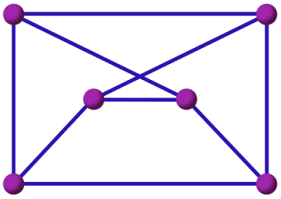

SEMINARIUM
MATEMATYKA DYSKRETNA

wtorek, 13 grudnia 2011 r. godz. 12.30, s. 304 A3/A4

GREEDY IS GOOD TO APPROXIMATE MINIMUM RAINBOW SUBGRAPHS

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We consider the Minimum Rainbow Subgraph problem (MRS): Given a graph G of order n, whose edges are coloured with p colours. Find a subgraph $F \subseteq G$ of minimum order and with p edges such that each colour occurs exactly once. This problem is NP-hard and APX-hard, even for graphs with maximum degree $\Delta = 2$.

In this talk we will show that the Greedy algorithm for the MRS problem has an approximation ratio of $\frac{\Delta}{2} + \frac{\ln \Delta + 1}{2}$ for graphs with maximum degree Δ. If the average degree d of a minimum rainbow subgraph is known, then the approximation ratio is $\frac{d}{2} + \frac{\ln \lceil d \rceil + 1}{2}$. These results improve the best known previous approximation ratios for the MRS problem.