WEIGHTED P-MEDIAN AND WEIGHTED P-CENTER: ANALYSIS OF SENSITIVITY OF OPTIMAL SOLUTION

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Weighted p-median and weighted p-center in graphs are well-known location problems with many practical applications.

In our contribution, we focus on sensitivity analysis of the optimal solution of the mentioned location problems concerning changes in the conditions in the graph. We consider the following cases:

1) Elongation of the length of the edge or the pair of edges. (In practice, it can represent the elongation of travel time of a road segment.)

2) Elongation of all edges. (In practice, this corresponds to an extension of driving time during rush hour.)

3) Changes of weights of vertices. (Practically, it represents the movement of residents due to work, school, shopping, etc.)