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Example

frequently, e.g., when applying the backup path sharing [7], [8]. In this case, the cost of an arc a_h in a backup path is often the fraction of its original cost, used in working path

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discussed in Section III, this value has rarely ever reached. k -Penalty utilizes Dijkstra's algorithm [6] to determine each of k paths of a demand, which requires $O(|N|^2)$ time,

¹ In general, the probability of a trap decreases with the increase of the average node degree and even approaches 0 in the case of networks represented by full graphs. If the probability of a trap is low, the set of k -disjoint paths is often obtained by solving the Min-Min problem (e.g., using the branch-and-bound method) to minimize the cost of the working path [4], [9]. However, the solution may not be optimal regarding the other $k - 1$ paths.