

## Abstract

### THE MULTI-DIMENSIONAL ASSIGNMENT AND QUADRATIC ASSIGNMENT PROBLEMS

The multi-dimensional assignment problem is a higher dimensional version of the standard (two-dimensional) assignment problem in the literature. The higher dimensions can be thought of as time or space dimensions or both.

An algorithm is proposed for the solution of the multi-index assignment problem. The algorithm is based on a tree search technique of the branch and bound variety. It uses dual subproblems to provide easily computed bounds for the primal assignment problem. The same algorithm with appropriate modifications is used to find an optimal solution to the multi-dimensional quadratic assignment problem.