

# Iterative Algorithms for Integrated Optimization Problems

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In practice, many integrated optimization problems are solved either sequentially or iteratively. In the latter case, the variables are partitioned, and in every step, only one part of the variables is considered variable, whereas all other parts are kept fixed. The optimal solution of this restricted problem is taken as input for the next step.

In this talk, the sequence of solutions generated by such an algorithm is investigated. In particular, the following two questions are treated: 1. When does the sequence converge? and 2. If the sequence converges, which properties does the limit have (under different assumptions about the optimization problem)? In general, the limit is not an optimal solution to the original problem. However, conditions will be given under which some generalizations of optimality, like Pareto optimality or Nash balancedness, can be ensured for the limit.