A COMPARATIVE STUDY OF RELAXATION ALGORITHMS FOR THE LINEAR SEMI-INFINITE FEASIBILITY PROBLEM

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Abstract: The feasibility problem of finding a feasible solution to a linear semi-infinite system arises in different contexts. This talk proposes a new relaxation algorithm with variable step size which uses the Extended Cutting Angle Method (ECAM) for solving the global optimization subproblems. The algorithm converges linearly to a feasible solution under mild conditions. Numerical experiments show that it can compete successfully, from the computational efficiency point of view, with the already known fixed step size relaxation algorithm.

Keywords: Linear semi-infinite systems, feasibility problem, relaxation method, cutting angle method.