Approximation of objective function of the scheduling problem

Alexander Lazarev
Institute of Control Sciences, Moscow, Russia

jobmath@mail.ru

Abstract

The problem of approximating the coefficients of the objective function of the scheduling problem for single machine is considered. It is necessary to minimize the sum of the weighted completion times when we are unknown coefficients, but a certain set of optimal schedules is known. It is shown that the approximation problem is reduced to finding a solution to the system of linear inequalities. For the case of equal release times of jobs method for solving the corresponding system of linear inequalities has been developed. Based on it, a polynomial algorithm is developed for searching for weighting coefficients that satisfy given optimal schedules, and estimating the approximation error.