

Abstract

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Time-Cost Tradeoff problems Solution for Construction Projects Using Linear Integer Programming

Time-Cost Optimization (TCO) problem is one of the greatest challenges in construction project planning and control. TCO may be defined as a process to identify suitable construction activities for speeding up, and deciding "by how much" so as to attain the best possible savings in both time and cost. In this paper, an Integer Linear Model is developed to obtain solutions of time-cost tradeoff (TCT) problems in construction projects. The proposed Model collects most related characteristics and constraints presented by different previous works. Also, new factors have been added to the model so as to represent more real TCT problems in life projects. The model is solved by Excel 2007 and verified using the commercial package Primavera (P3) throughout an application example. Good agreement results of model response against different related factors are founded through conducting sensitivity analysis.