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A Bi-Objective Model to Address Simultaneous Formulation of Project Scheduling and Material Ordering

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Abstract : Concurrent planning of project scheduling and material ordering has been increasingly addressed within last decades as an approach to improve the project execution costs. Therefore, we have taken the problem into consideration in this paper, aiming to maximize schedules quality robustness, in addition to minimize the relevant costs. In this regard, a bi-objective mathematical model is developed to formulate the problem. Moreover, it is possible to utilize the all-unit discount for materials purchasing. The problem is then solved by the constraint method, and the Pareto front is obtained for a variety of robustness values. The applicability and efficiency of the proposed model is tested by different numerical instances, finally.

Keywords : e-constraint method, material ordering, project management, project scheduling
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