

Applying Bin Packing Heuristics to the Repair Manpower Assignment in Steel Industry

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Abstract

In this paper, we consider the maintenance scheduling in the steel manufacturing plant where thousands of maintenance actions are to be taken every month. For the minimal disturbance in the production flow, the requested dates for most maintenance actions tend to be concentrated on the predetermined preventive maintenance shut down periods. Hence, there is a peak manpower demand periods. However, the maintenance manpower is not always enough to accommodate all those maintenance requests and therefore some of the requests must be turned down. Hence, it is not a trivial task to use the given limited manpower to accommodate as much requested repair jobs as possible. We have shown that this scheduling problem can be modeled as a variant of the two-dimensional bin packing problem(2DBP). Since, 2DBP belongs to the NP-complete class, developing an efficient optimal algorithm for the problem is practically impossible. Therefore, we develop a heuristic method which can be seen as a variant of the heuristic algorithm and discuss its performance.

SESSION B3: 정보통신 I

B3.1 CALS구현을 위한 ERP 모형 개발에 관한 연구
이교상, 백종명, 박화규(시스템 공학 연구소)

B3.2 분산환경에서의 CM구현방안에 대한 연구
조장혁, 정석찬, 윤선희, 우훈식, 주경준(시스템공학연구소 시스템통합연구부)

B3.3 우선순위를 고려한 ATM 스위칭노드의 최적 대기정책
신성락, 김종수(한양대학교 산업공학과)

B3.4 교환/전송 기술진화에 따른 전화교환망 구조변화 -시뮬레이션 모형에 의한 사례분석
송석재, 장석권(한양대학교 경영학과), 신용수(포항공과대학 산업공학과)

