

Abstract

Developing Heuristics for the Scheduling Problem With Recirculation on Flexible flow shop

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As information technology advances, whole world environmental trend and the competition is more and more intense. The enterprise must face faster demand changes and the problem of shorter order fulfillment. Therefore, how to apply efficient production planning and shop floor scheduling to attain a better order fulfillment and real time production of shop floor capacity is the goal enterprises strive toward.

The shop floor scheduling problems using dispatching rules to solve are focus on job shop scheduling problems and flow shop scheduling problems. Moreover, those problems adding the concept of parallel machine will change into flexible job shop scheduling problems and flexible flow shop scheduling problems. Many service industries also belong to this type. In addition, those service industries' processes also contain the important characteristic of recirculation. Now, there are two problems I would like to solve. First, Whether the dispatching rules which can get good results in flexible flow shop scheduling problems will also get good results in flexible flow shop scheduling problems with recirculation. Second, I add the characteristic of parallel machine into my problem, so it means jobs in the process can be operated by two or more workers. Therefore, which dispatching rule will get better results based on chosen achievement targets in the problem is very interesting to research.

Key word : flexible flow shop, parallel machine, dispatching rule, recirculation