HEURISTIC APPROACH BASED SIMILARITY COEFFICIENT FOR MACHINE CELL FORMATION IN A FLEXIBLE CELLULAR MANUFACTURING SYSTEM

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Abstract

This paper presents a heuristic based similarity coefficient approach to the problem of making manufacturing cells. The proposed method incorporates relevant production data such as operation sequence, processing time, and production volume, number of operation per part and part demand in the early stages of grouping decisions for FCMS. Many algorithms have been proposed to form manufacturing cells from component routings. However, many of these do not have the capability of solving large problems considering production data. Numerous methods are available for clustering machines into machine cells. Similarity coefficients between machines are not absolute, and they still need more attention from researchers. An example problem is also included and demonstrated in this paper which is coded in MATLAB 2009 to find similarity coefficient between machines.