

عنوان مقاله:

An effective approach for Multi-objective Flexible Job Shop Problem - A New Cosmogony Algorithm

محل انتشار:

نهمین کنفرانس بین المللی مهندسی صنایع (سال: 1391)

تعداد صفحات اصل مقاله: 13

نویسندگان:

Hamed Mohammadi Andargoli - *Science and Research Branch, Islamic Azad University*

Nasser Shahsavari Pour - *University of Valie-Asr*

Reza Tavakkoli-Moghaddam - *University of Tehran*

Mohammad Hossein Abolhasani Ashkezari - *Science and Research Branch, Islamic Azad University*

خلاصه مقاله:

Scheduling is a very important issue in the field of production management and optimization. The flexible job shop problem (FJSP) is a typical combinatorial optimization problem, which is attracted the attention of many researchers. Researchers often use the creative and innovative methods to solve NP-hard problems because of the huge solution space. In addition, the problem becomes more complex when multi-objective optimization is considered with conflicting objectives, and the accuracy of the solving method evaluates for solving this kind of problems. This paper addresses the FJSP with three objectives minimizing the makespan, maximal machine workload and total workload. We propose a new meta-heuristic algorithm, called cosmogony algorithm (CA), which is inspired by the process of evolution of organisms in the ecosystem and food chain in ecology science. It defines the process of evolution of organisms to achieve optimal (or near-optimal) solutions. The performance of the proposed algorithm is tested by numerical experiments on a number of representative problems, The computational results are proved that our proposed CA is an effective approach to solve multi-objective FJSPs.

کلمات کلیدی:

Cosmogony Algorithm; Flexible job shop; Multi-objective ; Metaheuristics

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/188913>

