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基于DEPSO 的模糊时间ZW多产品厂间歇调度

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A study of the DEPSO-based multiproduct plants batch scheduling under uncertainty with zero wait

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摘要　　　图/表　　　参考文献(12)　　相关文章 (15)

全文: PDF (199 KB)　HTML (1 KB)

输出: BibTeX | EndNote (RIS)

摘要

研究以最小化完工时间为目标的模糊加工时间零等待多产品厂间歇调度问题，提出一种基于差分进化粒子群优化(DEPSO) 的间歇调度算法. 以基本粒子群算法为整体进化框架，采用基于反向学习的方法初始化种群，引入群体极值保持代数作为阈值，利用基于排序的差分进化算法优化粒子个体极值位置，改变粒子的搜索范围，防止粒子陷入局部极值. 仿真实验验证了所提算法在解决模糊加工时间零等待多产品厂间歇调度问题上的有效性和优越性.

关键词： 粒子群算法, 离散差分进化, 模糊时间, 零等待, 间歇调度

Abstract:

For minimizing the total flow time of multiproduct plants batch scheduling under uncertain processing time with zero wait, a batch scheduling algorithm based on the differential evolution particle swarm optimization is proposed. With basic particle swarm optimization as the algorithm's framework, the opposition-based learning algorithm is used to initialize population, the group extreme is introduced to keep algebra as a threshold, and the permutation-based differential evolution algorithm is used to optimize the individual extremum so as to change the search range and prevent the particle falling into local extremum. The simulation results show the effectiveness of the proposed algorithm in solving multiproduct plants batch scheduling under uncertainty with zero wait.

Key words： particle swarm optimization　discrete differential evolution　uncertain processing time　zero wait batch scheduling

引用本文:

徐震浩 李青青 顾幸生. 基于DEPSO 的模糊时间ZW 多产品厂间歇调度[J]. 控制与决策, 2015, 30(12): 2275-2279. XU Zhen-hao LI Qing-qing GU Xing-sheng. A study of the DEPSO-based multiproduct plants batch scheduling under uncertainty with zero wait. Control and Decision, 2015, 30(12): 2275-2279.

链接本文:

http://www.kzyjc.net:8080/CN/10.13195/j.kzyjc.2014.1735　　或　　http://www.kzyjc.net:8080/CN/Y2015/V30/I12/2275

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