



## **SCHEDULING SINGLE BATCH PROCESSING MACHINE USING MAX-MIN ANT SYSTEM ALGORITHM**

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Received March 26, 2012

### **Abstract**

Problem of scheduling single batch processing machine is studied in this paper. The machine is batch processing machine which can process several jobs together as a batch as long as the total size of jobs in a batch less than or equal to machine capacity. Jobs have non-identical sizes and job processing times. Max-min ant system (MMAS) algorithm is designed to solve the problem. A new local search method is proposed to improve the performance of the algorithm by adjusting jobs between different batches. Preliminary experiment was conducted to determine the parameters of MMAS and MMAS was compared with several other algorithms including AC (Ant Cycle), GA (Genetic Algorithm) and two heuristics FFLPT and BFLPT through numerical experiment. The experiment results show that MMAS outperformed others on almost all problem instances.

**Keywords and phrases:** scheduling, batch processing machine, max-min ant system.

