

Robust Scheduling of Batch Processes in Uncertain Cases

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Most previous researches handling scenario-based stochastic problems took expected value as an objective function in the problem. However, the meaning of expected value itself is sum of the probability of each scenario times each objective value. It implies nothing but currently calculated biggest value. It doesn't work when unexpected event happens. Therefore it is required to consider additional criteria, for example variance and standard deviation. In the context of scheduling, robustness can be defined as a measure of resilience of the scheduling objective to change in the face of parameter uncertainty and disruptive events. Scheduling is performed to satisfy variety of different objectives such as makespan minimization or maximization of profit or production. The most important determinant variable of scheduling problem is sequence. Briefly speaking, robust scheduling of stochastic problem is taken as to find a sequence that minimizes the influences by any events. Several examples show the differences between robust criterion and only expected value.