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Improving workload control order release: Incorporating a starvation avoidance trigger into continuous release

Abstract:

Order release is a key component of Workload Control - a production planning and control system that aims at balancing workloads across workstations, while ensuring the timely release of jobs (or orders) to the shop floor in order to meet due dates. Several release methods have been proposed and evaluated in the WLC literature. A major criterion to distinguish between release methods is whether they take the release decision at periodic time intervals or continuously. This paper aims at improving WLC order release by incorporating a starvation avoidance trigger into continuous release. Using simulation, we demonstrate that significant performance improvements in terms of mean tardiness and standard deviation of lateness can be obtained. These results are expected to have important implications for industrial practice and for future research on WLC.

Keywords: Workload control; Continuous order release; Starvation avoidance