Move Blocking Strategy Applied to Re-entrant Manufacturing Line Scheduling

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A model predictive control (MPC)-based fab-wide scheduling have been suggested to simultaneously solve the constraint-aware production optimization and in-process inventory level control at each scheduling instance. However, its application to the real fab suffers from computational difficulties brought by the need to solve a huge optimization problem on-line to handle long cycle times, multiple product types, hundreds of machines/processing steps and re-entrant product flows. Therefore, in this study, an offset-blocking strategy with simple recursive least square (RLS) estimation method is suggested for this fab-wide scheduler. Despite of its simplicity, this method shows excellent performance, even under the plant/model mismatch scenario, with expected demand changes on the modified Intel mini-fab case study.