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Robust scheduling to minimize the weighted number of late jobs with interval due-date uncertainty

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Highlights

- The problem of scheduling jobs with interval uncertain due-dates is considered with the objective to minimize the total weight of late jobs, utilizing the min-max regret approach for computing robust solutions.
- It is shown how to compute the maximum regret for any given schedule.
- A new mixed-integer linear program (MIP) is developed for the general case of the problem.
- A polynomial time algorithm is given for the special case with unit weights, implying that in this case the uncertain counterpart is not more difficult to solve that the deterministic problem.
- Computational results are reported from the application of MIP using state-of-the-art software solver. Obtained results are compared against three heuristic solution methods: decomposition algorithm, lower bound heuristic and mid-point scenario heuristic.

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