

运筹学与信息科学研究所

Department of Operations Research and Information Science

学术报告

题目： A Flow-Based Formulation for Parallel Machine Scheduling Using Decision Diagrams

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时间： 4月19日（星期五） 14:00 – 15:00

地点： 数学院南楼 N620

摘要： We present a new flow-based formulation for identical parallel machine scheduling with a regular objective function and without idle time. The formulation is constructed with the help of a decision diagram that represents all job sequences that respect specific ordering rules. These rules rely on a partition of the planning horizon into, generally non-uniform, periods and do not exclude all optimal solutions, but they constrain solutions to adhere to a canonical form. The new formulation has numerous variables and constraints, and hence we apply a Dantzig-Wolfe decomposition in order to compute the linear programming relaxation in reasonable time; the resulting lower bound is stronger than the bound from the classical time-indexed formulation. We develop a branch-and-price framework that solves several instances from the literature for the first time. We compare the new formulation with the time-indexed and arc-time-indexed formulation by means of a series of computational experiments.

报告人简介： Roel Leus obtained his PhD in Operations Research (OR) from KU Leuven (Belgium) in 2003, and is currently full professor of OR at the Faculty of Economics and Business of the same university. He is also the program director of the Business Engineering programs (for all campuses, covering around 2000 students), and the chairman of the university-wide Advisory Committee for the Chinese Region of KU Leuven. He was the head of the research group ORSTAT (Operations Research and Statistics) from 2012 to 2016. His main research interests are in sequencing and scheduling, combinatorial optimization, and decision making under uncertainty.