

Wednesday 21th of April 2021

9 AM – 9:20 AM: Welcome session

9:20 AM – 10:20AM: Plenary session 1

[Robustness in Scheduling by Marjan van den Akker](#)

chair: Erwin Pesch

10:20 AM – 10:40 AM: Coffee break

10:40 AM – 12:20 PM: Parallel session W1

[Room 1: RCPSP 1](#)

chair: Stefan Creemers

**A New Lower Bound Approach for the Multi-mode Resource Constrained Project Scheduling Problem**

*Christian Stuerck*

**The Resource-Constrained Project Scheduling Problem: New Benchmark Results**

*Stefan Creemers*

**A new solution procedure for multi-skilled resources in resource-constrained project scheduling**

*Jakob Snauwaert and Mario Vanhoucke*

**Multi-project scheduling problems with shared multi-skill resource constraints**

*Meya Haroune, Cheikh Dhib, Emmanuel Néron, Ameer Soukhal, Hafedh*

**Solving large, long-horizon resource constrained multi project scheduling problems with genetic algorithms**

*Brendan Hill, Adam Scholz, Lachlan Brown and Ana Novak*

[Room 2: Shop scheduling](#)

chair: Ilya Chernykh

**A Conjunctive-disjunctive Graph Modeling Approach for Job-Shop Scheduling Problem with Changing Modes**

*Xavier Delorme, Gérard Fleury, Philippe Lacomme and Damien Lamy*

**Generating instances for the two-stage multi-machine assembly scheduling problem**

*Carla Talens, Victor Fernandez-Viagas and Paz Perez-Gonzalez*

**The Group Shop Scheduling**

*Damien Lamy and Simon Thevenin*

**Optima Localization for the Routing Open Shop: Computer-aided Proof**

*Ilya Chernykh and Olga Krivonogova*

**Ultimate Instance Reduction for the Routing Open Shop**

*Ilya Chernykh*

12:20 PM – 1:30 PM: Lunch break

1:30 PM – 3:10 PM: Parallel session W2

[Room 1: Risk management](#)

chair: Mario Vanhoucke

**An analytical model for budget allocation in risk prevention and risk protection**

*Xin Guan and Mario Vanhoucke*

**Conditional Value-at-Risk of the Completion Time in Fuzzy Activity Networks**

*Carlo Meloni, Marco Pranzo and Marcella Sama*

**Reference Class Forecasting to improve time and cost forecasts: Empirical and statistical analysis**

*Tom Servranckx, Mario Vanhoucke and Tarik Aouam*

**The impact of limited budget on the corrective action taking process**

*Jie Song, Annelies Martens and Mario Vanhoucke*

**Using exponential smoothing to integrate the impact of corrective actions on project time forecasting**

*Annelies Martens and Mario Vanhoucke*

[Room 2: Best student paper 1 \(30 min slots\)](#)

chair: Joanna Jozefowska

**Mixed-Integer Programming Formulations for the Anchor-Robust Project Scheduling Problem**

*Adèle Pass-Lanneau, Pascale Bendotti, Philippe Chrétienne and Pierre Fouilhoux*

**Multi-Scenario Scheduling with Rejection Option to Minimize the Makespan Criterion**

*Miri Gilenson and Dvir Shabtay*

**On the complexity of the crossdock truck-scheduling problem**

*Quentin Fabry, Alessandro Agnetis, Lotte Berghman and Cyril Briand*

3:10 PM – 3:30 PM: Coffee break

3:30 PM – 4:30 PM: Industrial plenary talk

[Industrial project and machine scheduling with Constraint Programming by Philippe Laborie](#)

chair: Pierre Lopez

4:30 PM – 5:50 PM: Parallel session W3

[Room 1: Single machine scheduling](#)

chair: Vincent T'kindt

**A column generation algorithm for the single machine parallel batch scheduling problem**

*Onur Ozturk*

**Adversarial bilevel scheduling on a single machine**

*Federico Della Croce and Vincent T'kindt*

**Exact and heuristic methods for characterizing optimal solutions for the 1||Lmax**

*Tifenn Rault, Ronan Bocquillon and Jean-Charles Billaut*

**Minimizing Flow Time on a Single Machine with Job Families and Setup Times**

*Arnaud Malapert and Margaux Nattaf*

[Room 2: Robust scheduling 1](#)

chair: Marcello Urgo

**Robust scheduling for target tracking with wireless sensor network considering spatial uncertainty**

*Florian Delavernhe, André Rossi and Marc Sevaux*

**A two-stage robust approach for minimizing the weighted number of tardy jobs with profit uncertainty**

*Henri Lefebvre, François Clautiaux and Boris D tienne*

**A Discrete Time Markov Decision Process to support the scheduling of re-manufacturing activities**

*Alessio Angius, Massimo Lanzini and Marcello Urgo*

**Buffer Sizing in Critical Chain Project Management by Network Decomposition**

*Bingling She, Bo Chen and Nicholas Hall*

Thursday the 22th of April 2021

9 AM – 10:40 AM: Parallel session T1

[Room 1: Constraint programming](#)

chair: Christian Artigues

**A constraint programming approach for planning items transportation in a workshop context**

*Valentin Antuori, Emmanuel H brard, Marie-Jos  Hugu t, Siham Essodaigui and Alain Nguyen*

**Embedded vision systems buffer minimization with energy consumption constraint**

*Khadija Hadj Salem, Tifenn Rault and Alexis Robbes*

**Solution Repair by Inequality Network Propagation in LocalSolver**

*L a Blaise, Christian Artigues and Thierry Beno st*

**Solving the Multi-mode Resource Investment Problem with Constraint Programming**

*Patrick Gerhards*

**Structural and Experimental Comparisons of Formulations for a Multi-Skill Project Scheduling Problem with Partial Preemption**

*Christian Artigues, Pierre Lopez and Oliver Polo*

[Room 2: Best student paper 2 \(30 min slots\)](#)

chair: Erik Demeulemeester

**A Generation Scheme for the Resource-Constrained Project Scheduling Problem with Partially Renewable Resources and Time Windows**

*Mareike Karnebogen and Jurgen Zimmermann*

**Maximizing value: Modeling and solving lean project management**

*Claudio Szwarzfiter, Avraham Shtub and Yale T. Herer*

**Minimizing the costs induced by perishable resource waste in a chemotherapy production unit**

*Alexis Robbes, Yannick Kergosien, Virginie Andr  and Jean-Charles Billaut*

10:40 AM – 11:00 AM: Coffee break

11:00 AM – 12:20 PM: Parallel session T2

[Room 1: Resource-unit focused project scheduling](#)

chair: Norbert Trautmann

**Index merge in application to multi-skill project scheduling**

*Dimitry Arkhipov and Olga Battaia*

**Metric Estimations for a Resource Leveling Problem With Variable Job Duration**

*Iliya Tarasov, Alain Ha t, Olga Battaia and Alexander Lazarev*

**A Continuous-Time Model for the Multi-Site Resource-Constrained Project Scheduling Problem**

*Mario Gnaegi and Norbert Trautmann*

**A Novel Matheuristic for the Multi-Site Resource-Constrained Project Scheduling Problem**

*Tamara Bigler, Mario Gnaegi and Norbert Trautmann*

[Room 2: Complexity results and Approximation algorithms](#)

chair: Alessandro Agnetis

**An FPTAS for Scheduling with Piecewise-Linear Nonmonotonic Convex Time-Dependent Processing Times and Job-Specific Agreeable Slopes**

*Helmut A. Sedding*

**Duplication and sequencing of unreliable jobs**

*Alessandro Agnetis, Paolo Detti, Ben Hermans and Marco Pranzo*

**On a Polynomial Solvability of the Routing Open Shop with a Variable Depot**

*Antonia Khramova and Ilya Chernykh*

**Near-Linear Approximation Algorithms for Scheduling Problems with Setup Times**

*Max Deppert and Klaus Jansen*

12:20 PM – 1:30 PM: Lunch break

1:30 PM – 3:10 PM: Parallel session T3

[Room 1: Flexible scheduling](#)

chair: Nadia Brauner

[Room 2: Applications: Logistics](#)

chair: Roel Leus

**A Benders decomposition for the flexible cyclic jobshop problem**

*Félix Quinton, Idir Hamaz and Laurent Houssin*

**A Serial Schedule Generation Scheme for Project Scheduling in Disaster Management**

*Niels-Fabian Baur and Julia Rieck*

**Computational Experiments for the Heuristic Solutions of the Two-Stage Chain Reentrant Hybrid Flow Shop and Model Extensions**

*Lowell Lorenzo*

**Scheduling problems with processing time dependent profit: applications and a nice polynomial case**

*Florian Fontan, Nadia Brauner and Pierre Lemaire*

**The generalised resource-constrained project scheduling problem with flexible resource profiles**

*Matthew Bold, Burak Boyaci, Marc Goerigk and Chris Kirkbride*

**A mixed integer programming approach for scheduling aircraft arrivals at terminal airspace fixes and runway threshold**

*Sana Ikli, Catherine Mancel, Marcel Mongeau, Xavier Olive and Emmanuel Rachelson*

**Minimizing Delays in Aircraft-Landing Scheduling**

*Marie-Sklaerder Vie, Nicolas Zufferey and Roel Leus*

**Scheduling and Routing Workers Teams for Ground Handling at Airports with Column Generation**

*Giacomo Dall'olio and Rainer Kolisch*

**Heuristics for Scheduling Pipe-laying Support Vessels: An Identical Parallel Machine Scheduling Approach**

*Victor Abu-Marrul, Davi Mecler, Rafael Martinelli, Silvio Hamacher and Irina Gribkovskaia*

**A Comparison of two MILP formulations for the resource renting problem**

*Max Reinke and Jurgen Zimmermann*

3:10 PM – 3:30 PM: Coffee break

3:30 PM – 4:30 PM: Plenary session 3

[Data driven Project Management by Mario Vanhoucke](#)

chair: Sigrid Knust

4:30 PM – 5:30 PM: Parallel session T4

[Room 1: Applications: Manufacturing](#)

chair: Jan Węglarz

[Room 2: Lower bounds, dominance and formulations](#)

chair: Safia Kedad-Sidhoum

**Modular equipment optimization in the design of multi-product reconfigurable manufacturing systems**

*Abdelkrim R. Yelles-Chaouche, Evgeny Gurevsky, Nadjib Brahimi, Alexandre Dolgui*

**Scheduling loads injection during flows merging in a collector**

*Blandine Vacher, Antoine Jouglet, Dritan Nace, Stephane Pietrowicz and Marwane Bouznif*

**Scheduling of battery charging tasks with limited common power source**

*Tomasz Lemanski, Rafal Rozycki, Grzegorz Waligóra and Jan Węglarz*

**Computing lower bounds for the cumulative scheduling problem**

*Jacques Carlier, Antoine Jouglet and Abderrahim Sahl*

**Linear inequalities for neighborhood based dominance properties for the common due-date scheduling problem**

*Anne-Elisabeth Falq, Safia Kedad-Sidhoum and Pierre Fouilhoux*

**Open shop problem with agreement graph: new results**

*Nour Elhouda Tellache, Mourad Boudhar and Farouk Yalaoui*

[5:30 PM – 5:50 PM: Best student paper award](#)

9 AM – 10:40 AM: Parallel session F1

[Room 1: Robust RCPSP](#)

chair: Rainer Kolisch

**A comparison of proactive and reactive scheduling approaches for the RCPSP with uncertain activity durations**

*Pedram Saeedi and Erik Demeulemeester*

**An Experimental Investigation on the Performance of Priority Rules for the Dynamic Stochastic Resource Constrained Multi-Project Scheduling Problem**

*Philipp Melchior, Rainer Kolisch and John Jack Kanet*

**Evaluation of Scheduling Policies for the SRCPSP in a Dynamic Multi-Project Environment**

*Hendrik Weber and Rainer Kolisch*

**Solving the stochastic multimode resource-constrained project scheduling problem**

*Claudio Szwarcfiter, Avraham Shtub and Yale T. Herer*

**Towards the Optimisation of the Dynamic and Stochastic Resource-Constrained Multi-Project Scheduling Problem**

*Ugur Satic, Peter Jacko and Christopher Kirkbride*

[Room 2: Multicriteria scheduling](#)

chair: Helena Brozova

**Decomposition approach for fixed jobs multi-agent scheduling problem on parallel machines with renewable resources**

*Zahout Boukhalfa, Ameer Soukhal and Patrick Martineau*

**Efficiency and Equity in the Multiple Organization Scheduling Problem**

*Martin Durand and Fanny Pascual*

**Why and how to evaluate the task threatness**

*Helena Brozova, Tomas Subrt, Jan Rydval and Petra Pavlickova*

**How to find Critical Mass of Task Threatening the Projects**

*Tomas Subrt and Helena Brozova*

**Multi-Objective Robotic Assembly Line Balancing Problem: A NSGA-II Approach Using Multi-Objective Shortest Path Decoders**

*Youssef Lahrichi, Laurent Deroussi, Nathalie Grangeon and Sylvie Norre*

10:40 AM – 11:00 AM: Coffee break

11:00 AM – 12:20 PM: Parallel session F2

[Room 1: Robust scheduling 2](#)

chair: Izack Cohen

**Adaptive Robust Parallel Machine Scheduling**

*Izack Cohen, Krzysztof Postek and Shimrit Shtern*

**Search space reduction in MILP approaches for the robust balancing of transfer lines**

*Aleksandr Pirogov, André Rossi, Evgeny Gurevsky and Alexandre Dolgui*

**Decision trees for robust scheduling**

*Tom Portoleau, Christian Artigues and Romain Guillaume*

**A Stochastic Programming Model to Schedule Projects under Cash Flow Uncertainty**

*Berfin Kutlag, Nazli Kalkan Nazli, Serhat Gul and Oncu Hazir*

[Room 2: Applications: health care and external resources](#)

chair: Jurgen Zimmermann

**Local Search Algorithm to Solve a Scheduling Problem in Healthcare Training Center**

*Simon Caillard, Laure Brisoux Devendeville and Corinne Lucet*

**Planning problem in Healthcare domain**

*Olivier Gérard, Laure Brisoux Devendeville and Corinne Lucet*

**Optimization of order for containers placement schedule in rail terminal operations**

*Nadiia Kalaida, Remy Dupas and Igor Grebennik*

12:20 PM – 1:30 PM: Lunch break

1:30 PM – 3:10 PM: Parallel session F3

**Room 1: Flowshop scheduling**

chair: Federico Della Croce

**An acceleration procedure for several objective functions in the permutation flow shop scheduling problem**

*Victor Fernandez-Viagas, José M. Molina-Pariente, Carla Talens and José M. Framiñán*

**An Inclusion-Exclusion based algorithm for the permutation flowshop scheduling problem**

*Olivier Ploton and Vincent T'kindt*

**Exact solution of the two-machine flow shop problem with 3 operations**

*Federico Della Croce, Fabio Salassa and Vincent T'kindt*

**Non-dominated sorting genetic algorithm for a bi-objective flexible flow shop problem. A Case Study**

*Ibeth Rodriguez Grattz, José-Fernando Jiménez, Eliana Marvé Gonzalez, Eduardo Puerto, Yenny Paredes and Juan Caballero*

**Scheduling to minimize maximum lateness in tree data gathering**

*Joanna Berlinska*

**Room 2: RCPSP 2**

chair: Massimiliano Caramia

**New benchmark datasets for the RCPSP**

*Rob Van Eynde and Mario Vanhoucke*

**A new tool for analysing and reporting solutions for the RCPSP and MMRCPS**

*José Coelho, Mario Vanhoucke and Ricardo Amaro*

**An analysis of critical alternatives in the RCPSP-AS**

*Tom Servranckx and Mario Vanhoucke*

**Adapting the RCPSP framework to Evacuation Problems**

*Christian Artigues, Alain Quilliot, H  l  ne Toussaint and Peter Stuckey*

**On the Activity Criticality in Project Scheduling with Generalized Precedence Relationships**

*Lucio Bianco, Massimiliano Caramia and Stefano Giordani*

3:10 PM – 3:30 PM: Coffee break

3:30 PM – 4:30 PM: Plenary session 4

**Modeling and solving complex job-shop scheduling problems by St  phane Dauz  re-P  r  s**

chair: Chris Potts

4:30 PM – 5:00 PM: Closing session