

CP Papers on Scheduling

Helmut Simonis

February 6, 2024

1 Introduction

2 Conference Paper List

Table 1 lists relevant papers on CP and Scheduling from the CP and CPAIOR conferences. It gives the author names and title of the paper, the reference to the published paper, the year and conference or journal where the paper was published. It also lists the CP systems that were used in the paper, and states if data and/or code of the paper is available online. A link to the stored location is given where it is known.

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
C. Juvin, E. Hebrard, L. Houssin, P. Lopez	An Efficient Constraint Programming Approach to Preemptive Job Shop Scheduling	[120]	2023	CP	16	CP Opt Mistral	ref	y		PJSSP	endBeforeStart span noOverlap
G. Pováda, N. Álvarez, C. Artigues	Partially Preemptive Multi Skill/Mode Resource-Constrained Project Scheduling with Generalized Precedence Relations and Calendars	[187]	2023	CP	21	CP Opt MiniZinc Chuffed	y	y		PP-MS- MMRCPSP/n cal	
Y. Aalian, G. Pesant, M. Gamache	Optimization of Short-Term Underground Mine Planning Using Constraint Programming	[1]	2023	CP	16	CP Opt	n	n			?
R. Kameugne, S. Fetgo, T. Noulamo, C. Djamegni	Horizontally Elastic Edge Finder Rule for Cumulative Constraint Based on Slack and Density	[125]	2023	CP	17	?	BL PSPLib	n	-	RCPSPs	cumulative
N. Efthymiou, N. Yorke-Smith	Predicting the Optimal Period for Cyclic Hoist Scheduling Problems	[70]	2023	CPAIOR	16	OR-Tools	n	n	-	CHSP	-
S. Squillaci, C. Pralet, S. Roussel	Scheduling Complex Observation Requests for a Constellation of Satellites: Large Neighborhood Search Approaches	[213]	2023	CPAIOR	17	Cplex Studio	y	n	-	EOSP	?
D. Kim, Y. Choi, K. Moon, M. Lee, K. Lee, M. Pinedo	Iterated Greedy Constraint Programming for Scheduling Steelmaking Continuous Casting	[131]	2023	CPAIOR	16	Gurobi OR-Tools	y	n	-	SCC	alternative noOverlap
C. Juvin, L. Houssin, P. Lopez	Constraint Programming for the Robust Two-Machine Flow-Shop Scheduling Problem with Budgeted Uncertainty	[121]	2023	CPAIOR	16	CP Opt Cplex	ref	n	-	Perm FSSP	endBeforeStart noOverlap sameSequence
F.Tardivo, A. Dovier, A. Formisano, L. Michel, E.Pontelli	Constraint Propagation on GPU: A Case Study for the Cumulative Constraint	[216]	2023	CPAIOR	18	MiniCPP MiniZinc	PSPLib BL Pack	y	-	RCPSP	cumulative

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
R. Boudreault, V. Simard, D. Lafond, C. Quimper	A Constraint Programming Approach to Ship Re-fit Project Scheduling	[40]	2022	CP	16	MiniZinc Chuffed		y	-	RCPSP	cumulative
L. Popovic, A. Côté, M. Gaha, F. Nguewouo, Q. Cappart	Scheduling the Equipment Maintenance of an Electric Power Transmission Network Using Constraint Programming	[186]	2022	CP	15	CP Opt	n	n	-	TMS	alwaysIn noOverlap
F. Winter, S. Meiswinkel, N. Musliu, D. Walkiewicz	Modeling and Solving Parallel Machine Scheduling with Contamination Constraints in the Agricultural Industry	[239]	2022	CP	18	Cplex Gurobi CP Opt Sim Anneal	y	y	-	PMSP	alternative noOverlap
E. Armstrong, M. Garraffa, B. O'Sullivan, H. Simonis	A Two-Phase Hybrid Approach for the Hybrid Flexible Flowshop with Transportation Times	[8]	2022	CPAIOR	13	CP Opt	(y)	-	[7]	$HFFm tt C_m$	endBeforeStart alternative cumulative noOverlap
M. Geitz, C. Grozea, W. Steigerwald, R. Stöhr, A. Wolf	Solving the Extended Job Shop Scheduling Problem with AGVs - Classical and Quantum Approaches	[87]	2022	CPAIOR	18	firstCS QUBO	y	n	-	JSSP	
Y. Ouellet, C. Quimper	A MinCumulative Resource Constraint	[182]	2022	CPAIOR	17	Choco	y	y	-		cumulative minCumulative
E. Armstrong, M. Garraffa, B. O'Sullivan, H. Simonis	The Hybrid Flexible Flowshop with Transportation Times	[7]	2021	CP	18	MiniZinc Chuffed CP Opt SICStus	y	y	-	$HFFm tt C_m$	cumulative diffn table
V. Antuori, E. Hebrard, M. Huguet, S. Essoudaigui, A. Nguyen	Combining Monte Carlo Tree Search and Depth First Search Methods for a Car Manufacturing Workshop Scheduling Problem	[6]	2021	CP	16	MCTS	y	y	[]		
B. Kovács, P. Tassel, W. Kohlenbrein, P. Schrott-Kostwein, M. Gebser	Utilizing Constraint Optimization for Industrial Machine Workload Balancing	[141]	2021	CP	17	Gurobi Cplex CP Opt	y	y	-		cumulative
M. Lackner, C. Mrkvicka, N. Musliu, D. Walkiewicz, F. Winter	Minimizing Cumulative Batch Processing Time for an Industrial Oven Scheduling Problem	[148]	2021	CP	18	OR-Tools CP Opt Chuffed OR-Tools Gurobi OPL CP Opt	y	y		OSP	
A. Hill, J. Ticktin, T. Vossen	A Computational Study of Constraint Programming Approaches for Resource-Constrained Project Scheduling with Autonomous Learning Effects	[111]	2021	CPAIOR	16	CP Opt	PSPlib	n	-	RCPSP	cumulative alternative endBeforeStart
C. Klanke, D. Bleidorn, V. Yfantis, S.Engell	Combining Constraint Programming and Temporal Decomposition Approaches - Scheduling of an Industrial Formulation Plant	[132]	2021	CPAIOR	16	OR-Tools	n	n	-		cumulative circuit noOverlap
C. Hanen, A. Kordon, T. Pedersen	Two Deadline Reduction Algorithms for Scheduling Dependent Tasks on Parallel Processors	[99]	2021	CPAIOR	17	Python	ref	n	-	$P prec, r_i, d_i $	-
M. Åstrand, M. Johansson, H. Feyzmahdavian	Short-Term Scheduling of Production Fleets in Underground Mines Using CP-Based LNS	[11]	2021	CPAIOR	18	Gecode	ref generated	n	-		-
T. Geibinger, L. Kletzander, M. Krainz, F. Mischek, N. Musliu, F. Winter	Physician Scheduling During a Pandemic	[85]	2021	CPAIOR	10	MiniZinc	y	n	-		nvalue
M. Nattaf, A. Malapert	Filtering Rules for Flow Time Minimization in a Parallel Machine Scheduling Problem	[178]	2020	CP	16	Cplex CP Opt	-	-	[]	PTC	alternative noOverlap
L. Groleaz, S. Ndiaye, C. Solnon	Solving the Group Cumulative Scheduling Problem with CPO and ACO	[97]	2020	CP	17	CP Opt ACO	-	-	[96]	GCSP	group cumulative
A. Mercier-Aubin, J. Gaudreault, C. Quimper	Leveraging Constraint Scheduling: A Case Study to the Textile Industry	[169]	2020	CPAIOR	13	MiniZinc Chuffed	a	a	-		circuit cumulative

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
T. Tang, C. Beck	CP and Hybrid Models for Two-Stage Batching and Scheduling	[215]	2020	CPAIOR	16	Cplex CP Opt	n	n	-	2BPHFSP	span alwaysIn
J. Wessén, M. Carlsson, C. Schulte	Scheduling of Dual-Arm Multi-tool Assembly Robots and Workspace Layout Optimization	[238]	2020	CPAIOR	10	Gecode	n	n	-		circuit alldifferent
G. Col, E. Teppan	Industrial Size Job Shop Scheduling Tackled by Present Day CP Solvers	[54]	2019	CP	17	CP Opt OR-Tools	y	y	-	JSSP	noOverlap
S. Frimodig, C. Schulte	Models for Radiation Therapy Patient Scheduling	[77]	2019	CP	17	Mini-Zinc Gecode Cplex	n	n	-		cumulative regular bin-packing
C. Galleguillos, Z. Kiziltan, A. Sîrbu, Ö. Babaoglu	Constraint Programming-Based Job Dispatching for Modern HPC Applications	[79]	2019	CP	18	OR-Tools		y		on-line dis- patch	
S. Murín, H. Rudová	Scheduling of Mobile Robots Using Constraint Programming	[173]	2019	CP	16	CP Opt Cplex OPL	y	y		JSPT	endBeforeStart alternative noOverlap
A. Tesch	Improving Energetic Propagations for Cumulative Scheduling	[218]	2018	CP	17						
S. He, M. Wallace, G. Gange, A. Liebman, C. Wilson	A Fast and Scalable Algorithm for Scheduling Large Numbers of Devices Under Real-Time Pricing	[100]	2018	CP	18						
M. Boffill, J. Coll, J. Suy, M. Villaret	An Efficient SMT Approach to Solve MR-CPSP/max Instances with Tight Constraints on Resources	[32]	2017	CP	9						
C. Pralet	An Incomplete Constraint-Based System for Scheduling with Renewable Resources	[188]	2017	CP	19						
K. Young, T. Feydy, A. Schutt	Constraint Programming Applied to the Multi-Skill Project Scheduling Problem	[243]	2017	CP	10						
A. Goldwaser, A. Schutt	Optimal Torpedo Scheduling	[90]	2017	CP	16						
T. Liu, R. Di Cosmo, M. Gabbrielli, J. Mauro	NightSplitter: A Scheduling Tool to Optimize (Sub)group Activities	[159]	2017	CP	17						
M. Mossige, A. Gotlieb, H. Spieker, H. Meling, M. Carlsson	Time-Aware Test Case Execution Scheduling for Cyber-Physical Systems	[171]	2017	CP	18						
J. Hooker	Job Sequencing Bounds from Decision Diagrams	[116]	2017	CP	14						
A. Bonfietti, A. Zanarini, M. Lombardi, M. Milano	The Multirate Resource Constraint	[38]	2016	CP	17						
A. Schutt, P. Stuckey	Explaining Producer/Consumer Constraints	[203]	2016	CP	17						
R. Szeredi, A. Schutt	Modelling and Solving Multi-mode Resource-Constrained Project Scheduling	[214]	2016	CP	10						
A. Tesch	A Nearly Exact Propagation Algorithm for Energetic Reasoning in $\mathcal{O}(n^2 \log n)$	[217]	2016	CP	26						
S. Van Cauwelaert, C. Dejemeppe, J. Monette, P. Schaus	Efficient Filtering for the Unary Resource with Family-Based Transition Times	[47]	2016	CP	16						
K. Booth, G. Nejat, C. Beck	A Constraint Programming Approach to Multi-Robot Task Allocation and Scheduling in Retirement Homes	[39]	2016	CP	17						
K. Giles, W. van Hoeve	Solving a Supply-Delivery Scheduling Problem with Constraint Programming	[89]	2016	CP	16						
B. Lim, H. Hijazi, S. Thiébaux, M. van den Briel	Online HVAC-Aware Occupancy Scheduling with Adaptive Temperature Control	[156]	2016	CP	18						
C. Dejemeppe, S. Van Cauwelaert, P. Schaus	The Unary Resource with Transition Times	[60]	2015	CP	16						

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
S. Gay, R. Hartert, C. Lecoutre, P. Schaus	Conflict Ordering Search for Scheduling Problems	[81]	2015	CP	9						
S. Gay, R. Hartert, P. Schaus	Simple and Scalable Time-Table Filtering for the Cumulative Constraint	[82]	2015	CP	9						
S. Kreter, A. Schutt, P. Stuckey	Modeling and Solving Project Scheduling with Calendars	[142]	2015	CP	17						
M. Lombardi, A. Bonfietti, M. Milano	Deterministic Estimation of the Expected Makespan of a POS Under Duration Uncertainty	[160]	2015	CP	16						
M. Siala, C. Artigues, E. Hebrard	Two Clause Learning Approaches for Disjunctive Scheduling	[207]	2015	CP	10						
C. Even, A. Schutt, P. Van Hentenryck	A Constraint Programming Approach for Non-preemptive Evacuation Scheduling	[72]	2015	CP	18						
S. Murphy, O. Manzano, K. Brown	Design and Evaluation of a Constraint-Based Energy Saving and Scheduling Recommender System	[174]	2015	CP	17						
C. Pralet, S. Lemai-Chenevier, J. Jaubert	Scheduling Running Modes of Satellite Instruments Using Constraint-Based Local Search	[189]	2015	CP	16						
A. Derrien, T. Petit	A New Characterization of Relevant Intervals for Energetic Reasoning	[63]	2014	CP	9						
A. Derrien, T. Petit, S. Zampelli	A Declarative Paradigm for Robust Cumulative Scheduling	[64]	2014	CP	9						
V. Houndji, P. Schaus, L. Wolsey, Y. Deville	The StockingCost Constraint	[118]	2014	CP	16						
A. Bartolini, A. Borghesi, T. Bridi, M. Lombardi, M. Milano	Proactive Workload Dispatching on the EU-RORA Supercomputer	[19]	2014	CP	16						
M. Bofill, J. Espasa, M. Garcia, M. Palahí, J. Suy, M. Villaret	Scheduling B2B Meetings	[33]	2014	CP	16						
S. Di Alesio, S. Nejati, L. Briand, A. Gotlieb	Worst-Case Scheduling of Software Tasks - A Constraint Optimization Model to Support Performance Testing	[65]	2014	CP	18						
S. Gay, P. Schaus, V. De Smedt	Continuous Casting Scheduling with Constraint Programming	[84]	2014	CP	15						
P. Ouellet, C. Quimper	Time-Table Extended-Edge-Finding for the Cumulative Constraint	[180]	2013	CP	16						
A. Schutt, T. Feydy, P. Stuckey	Scheduling Optional Tasks with Explanation	[200]	2013	CP	17						
G. Simonin, C. Artigues, E. Hebrard, P. Lopez	Scheduling Scientific Experiments on the Rosetta/Philae Mission	[208]	2012	CP	15						
		[152]	2012	CP							
		[205]	2012	CP							
		[119]	2012	CP							
		[110]	2011	CP							
		[35]	2011	CP							
		[52]	2011	CP							
		[93]	2011	CP							
		[126]	2011	CP							
		[163]	2010	CP							
		[204]	2010	CP							
		[13]	2009	CP							
		[94]	2009	CP							
		[162]	2009	CP							
		[201]	2009	CP							
		[229]	2009	CP							

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
		[172]	2008	CP							
		[59]	2007	CP							
		[80]	2007	CP							
		[222]	2007	CP							
		[130]	2006	CP							
		[10]	2005	CP							
		[75]	2005	CP							
		[114]	2005	CP							
		[66]	2005	CP							
		[2]	2005	CP							
		[45]	2005	CP							
		[241]	2005	CP							
		[101]	2005	CP							
		[137]	2005	CP							
		[232]	2004	CP							
		[112]	2004	CP							
		[139]	2004	CP							
		[155]	2004	CP							
		[179]	2003	CP							
		[144]	2003	CP							
		[240]	2003	CP							
		[56]	2003	CP							
		[226]	2003	CP							
		[21]	2002	CP							
		[175]	2002	CP							
		[122]	2002	CP							
		[17]	2002	CP							
		[117]	2002	CP							
		[71]	2002	CP							
		[225]	2002	CP							
		[224]	2001	CP							
		[223]	2001	CP							
		[5]	2000	CP							
		[192]	1998	CP							
		[48]	1998	CP							
		[78]	1998	CP							
		[46]	1997	CP							
		[14]	1997	CP							
		[20]	1997	CP							
		[55]	1996	CP							
		[244]	1996	CP							
		[212]	1995	CP							
		[91]	1995	CP							
		[210]	1995	CP							
		[190]	1995	CP							
		[219]	1995	CP							
		[86]	2019	CPAIOR							
		[167]	2019	CPAIOR							
		[221]	2019	CPAIOR							
		[242]	2019	CPAIOR							
		[26]	2018	CPAIOR							
		[62]	2018	CPAIOR							
		[124]	2018	CPAIOR							
		[146]	2018	CPAIOR							
		[181]	2018	CPAIOR							

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
		[12]	2018	CPAIOR							
		[44]	2017	CPAIOR							
		[133]	2017	CPAIOR							
		[88]	2017	CPAIOR							
		[74]	2016	CPAIOR							
		[102]	2016	CPAIOR							
		[166]	2016	CPAIOR							
		[4]	2015	CPAIOR							
		[34]	2015	CPAIOR							
		[41]	2015	CPAIOR							
		[83]	2015	CPAIOR							
		[157]	2015	CPAIOR							
		[185]	2015	CPAIOR							
		[234]	2015	CPAIOR							
		[135]	2014	CPAIOR							
		[37]	2014	CPAIOR							
		[61]	2014	CPAIOR							
		[30]	2014	CPAIOR							
		[68]	2014	CPAIOR							
		[104]	2013	CPAIOR							
		[128]	2013	CPAIOR							
		[153]	2013	CPAIOR							
		[199]	2013	CPAIOR							
		[51]	2013	CPAIOR							
		[98]	2013	CPAIOR							
		[31]	2012	CPAIOR							
		[36]	2012	CPAIOR							
		[103]	2012	CPAIOR							
		[191]	2012	CPAIOR							
		[198]	2012	CPAIOR							
		[49]	2011	CPAIOR							
		[69]	2011	CPAIOR							
		[150]	2011	CPAIOR							
		[161]	2011	CPAIOR							
		[231]	2011	CPAIOR							
		[53]	2010	CPAIOR							
		[58]	2010	CPAIOR							
		[92]	2010	CPAIOR							
		[29]	2010	CPAIOR							
		[145]	2009	CPAIOR							
		[230]	2009	CPAIOR							
		[3]	2009	CPAIOR							
		[22]	2008	CPAIOR							
		[67]	2008	CPAIOR							
		[237]	2008	CPAIOR							
		[16]	2008	CPAIOR							
		[151]	2008	CPAIOR							
		[109]	2008	CPAIOR							
		[129]	2007	CPAIOR							
		[170]	2007	CPAIOR							
		[23]	2007	CPAIOR							
		[193]	2007	CPAIOR							
		[220]	2007	CPAIOR							
		[27]	2006	CPAIOR							
		[140]	2006	CPAIOR							

Table 1: List of Conference Papers

Authors	Title	Cite	Year	Conference	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
		[50]	2005	CPAIOR							
		[76]	2005	CPAIOR							
		[228]	2005	CPAIOR							
		[168]	2004	CPAIOR							
		[9]	2004	CPAIOR							
		[108]	2004	CPAIOR							
		[227]	2004	CPAIOR							
		[194]	2004	CPAIOR							

3 Journal Articles

Table 3: List of Journal Articles

Authors	Title	Cite	Year	Journal	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
M. Lackner, C. Mrkvicka, N. Musliu, D. Walkiewicz, F. Winter	Exact methods for the Oven Scheduling Problem	[149]	2023	Constraints	42	MiniZinc OPL	DZN JSON	y	[148]	OSP	alternative noOverlap forbidExtent
J. Caballero	Scheduling through logic-based tools	[42]	2023	Constraints	1	SAT	-	-	PhD Thesis	RCPSP	-
L. Campeau, M. Gamache	Short- and medium-term optimization of underground mine planning using constraint programming	[43]	2022	Constraints	18	CP Opt	ref	n			pulse alwaysIn endBeforeStart noOverlap alldifferent inverse
J. Koehler, J. Bürgler, U. Fontana, E. Fux, F. Herzog, M. Pouly, S. Saller, A. Salyaeva, P. Scheiblechner, K. Waelti	Cable tree wiring - benchmarking solvers on a real-world scheduling problem with a variety of precedence constraints	[134]	2021	Constraints	51	CP Opt OR-Tools Chuffed Cplex Gurobi Z3 OptiMathSat	DZN	y	-	CTW	
O. Benedikt, I. Módos, Z. Hanzálek	Power of pre-processing: production scheduling with variable energy pricing and power-saving states	[25]	2020	Constraints	19	CP Opt Gurobi	JSON	y			
M. Wallace, N. Yorke-Smith	A new constraint programming model and solving for the cyclic hoist scheduling problem	[236]	2020	Constraints	19	MiniZinc	DZN	y		CHSP	
P. Laborie, J. Rogerie, P. Shaw, P. Vilím	IBM ILOG CP optimizer for scheduling - 20+ years of scheduling with constraints at IBM/ILOG	[147]	2018	Constraints	41	OP Opt	-	-	-	-	-
H. Fahimi, Y. Ouellet, C. Quimper	Linear-time filtering algorithms for the disjunctive constraint and a quadratic filtering algorithm for the cumulative not-first not-last	[73]	2018	Constraints	22	Choco	(y)	n		RCPSP	disjunctive cumulative
S. Kreter, A. Schutt, P. Stuckey	Using constraint programming for solving RCPSP/max-cal	[143]	2017	Constraints	31	MiniZinc Chuffed Cplex	dead		CP 2015	RCPSP	cumulative cumulativeCalendar
M. Nattaf, C. Artigues, P. Lopez	Cumulative scheduling with variable task profiles and concave piecewise linear processing rate functions	[177]	2017	Constraints	18	Cplex	n	n	-	CECSP	-

Table 3: List of Journal Articles

Authors	Title	Cite	Year	Journal	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
G. Simonin, C. Artigues, E. Hebrard, P. Lopez	Scheduling scientific experiments for comet exploration	[209]	2015	Constraints	23	Ilog Scheduler	n	n	-		cumulative dataTransfer
A. Letort, M. Carlsson, N. Beldiceanu	Synchronized sweep algorithms for scalable scheduling constraints	[154]	2015	Constraints	52	Choco SICStus	dead	-	-	-	cumulative dimCumulative dimCumulativePrecedences
M. Nattaf, C. Artigues, P. Lopez	A hybrid exact method for a scheduling problem with a continuous resource and energy constraints	[176]	2015	Constraints	21	Cplex	n	n		CSCSP	
M. Siala	Search, propagation, and learning in sequencing and scheduling problems	[206]	2015	Constraints	2	-	-	-	PhD Thesis		
R. Kameugne	Propagation techniques of resource constraint for cumulative scheduling	[123]	2015	Constraints	2	-	-	-	PhD Thesis	RCPSP	
R. Kameugne, L. Fotso, J. Scott, Y. Ngo-Kateu	A quadratic edge-finding filtering algorithm for cumulative resource constraints	[127]	2014	Constraints	27	Gecode	y		CP 2011	CuSP	cumulative
S. Heinz, J. Schulz, C. Beck	Using dual presolving reductions to reformulate cumulative constraints	[106]	2013	Constraints	36	Cplex SCIP	ref	-	-	RCPSP RCPSP/max	cumulative
C. Öztürk, S. Tunali, B. Hnich, A. Ornek	Balancing and scheduling of flexible mixed model assembly lines	[183]	2013	Constraints	36	Ilog Solver Ilog Scheduler Cplex	y	-	-	SBSFMMAL	alldifferent disjunctive
S. Heinz, T. Schlechte, R. Stephan, M. Winkler	Solving steel mill slab design problems	[105]	2012	Constraints	12		Cplex	dead	-	SMSDP	-
M. Lombardi, M. Milano	Optimal methods for resource allocation and scheduling: a cross-disciplinary survey	[164]	2012	Constraints	35	-	-	-	-	survey	-
K. Limtanyakul, U. Schwiiegelshohn	Improvements of constraint programming and hybrid methods for scheduling of tests on vehicle prototypes	[158]	2012	Constraints	32	Cplex Ilog Scheduler	dead	-	-		
A. Kovács, C. Beck	A global constraint for total weighted completion time for unary resources	[136]	2011	Constraints	24	Ilog Scheduler	n	n	-		Completion
P. Schaus, P. Van Hentenryck, J. Monette, C. Coffrin, L. Michel, Y. Deville	Solving Steel Mill Slab Problems with constraint-based techniques: CP, LNS, and CBL	[196]	2011	Constraints	23	Comet	dead			SMSDP	
R. Barták, M. Salido	Constraint satisfaction for planning and scheduling problems	[18]	2011	Constraints	5	-	-	-		survey	
A. Schutt, T. Feydy, P. Stuckey, M. Wallace	Explaining the cumulative propagator	[202]	2011	Constraints	33	MiniZinc	PSPLib	-	-	RCPSP	cumulative
A. Kovács, T. Kis	Constraint programming approach to a bilevel scheduling problem	[138]	2011	Constraints	24	Ilog Solver	n	n	-	Bilevel Opt	
T. Lopes, A. Ciré, C. de Souza, A. Moura	A hybrid model for a multiproduct pipeline planning and scheduling problem	[165]	2010	Constraints	39	Ilog Solver	-	-	CP2008		
H. Simonis	Models for Global Constraint Applications	[211]	2007	Constraints	30	CHIP	n	n			cumulative diffn cycle inverse cumulative
J. Hooker	An Integrated Method for Planning and Scheduling to Minimize Tardiness	[115]	2006	Constraints	19	OPL Cplex Ilog Scheduler	n	n	CP 2005	CuSP	
J. Hooker	A Hybrid Method for the Planning and Scheduling	[113]	2005	Constraints	17	OPL Cplex Ilog Scheduler	n	n	-	CuSP	cumulative
P. Vilím, R. Barták, O. Cepek	Extension of $O(n \log n)$ Filtering Algorithms for the Unary Resource Constraint to Optional Activities	[233]	2005	Constraints	23		n	n		JSSP	disjunctive
P. Baptiste, C. Le Pape	Constraint Propagation and Decomposition Techniques for Highly Disjunctive and Highly Cumulative Project Scheduling Problems	[15]	2000	Constraints	21	CLAIRE	n	n		RCCSP	cumulative
K. Schild, J. Würtz	Scheduling of Time-Triggered Real-Time Systems	[197]	2000	Constraints	23	OZ	n	n	-		disjunctive

Table 3: List of Journal Articles

Authors	Title	Cite	Year	Journal	Pages	CP System	Data Avail	Code Avail	Based On	Classification	Constraints
H. El Sakkout, M. Wallace	Probe Backtrack Search for Minimal Perturbation in Dynamic Scheduling	[195]	2000	Constraints	30	Cplex	n	n	-	KRFP	
S. Heipcke, Y. Colombani, C. Cavalcante, C. de Souza	Scheduling under Labour Resource Constraints	[107]	2000	Constraints	8	ECLiPSe COME SchedEns	dead	n	-		
E. Bensana, M. Lemaitre, G. Verfaillie	Earth Observation Satellite Management	[28]	1999	Constraints	7	Ilog Solver	?	-	-		
S. Belhadji, A. Isli	Temporal Constraint Satisfaction Techniques in Job Shop Scheduling Problem Solving	[24]	1998	Constraints	9	-	n	n	-	TCSP JSSP	
C. Le Pape, P. Baptiste	Resource Constraints for Preemptive Job-shop Scheduling	[184]	1998	Constraints	25	Ilog Solver Claire	dead	-	-	PJSSP	disjunctive
J. Zhou	A Permutation-Based Approach for Solving the Job-Shop Problem	[245]	1997	Constraints	29	-	n	n	CP 1996	JSSP	flow sort alldifferent permutation
K. Darby-Dowman, J. Little, G. Mitra, M. Zafalon	Constraint Logic Programming and Integer Programming Approaches and Their Collaboration in Solving an Assignment Scheduling Problem	[57]	1997	Constraints	20	Cplex ECLiPSe	n	n	-	MGAP	
M. Wallace	Practical Applications of Constraint Programming	[235]	1996	Constraints	30	-	-	-	-	Survey	-
D. Grimes, G. Ifrim, B. O'Sullivan, H. Simonis	Analyzing the impact of electricity price forecasting on energy cost-aware scheduling	[95]	2014	J.SUSCOM			-	-	-		

4 Concept Matching

In order to find out properties of the articles, we try to find concepts in the pdf versions of the articles. We use the *pdfgrep* command to search for the number of occurrences of certain regular expressions in the files. This often clearly identifies the constraints used in the model, and the solvers that are discussed.

Ref.	alternative constraint	cumulative	disjunctive	diffn	table constraint	regular expression	circuit	nooverlap	endbeforestart	alwaysin	span constraint	bin.?packing	cplex	gurobi	gecode	choco	mistral	or.?tools	OPL	CHIP	Z3	OZ	claire	cpo	chuffed	sicstus	eclipse	ilog solver	ilog scheduler	mini.?zinc
AalianPG23 [1]	0	15	0	0	0	0	0	2	2	5	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
AlesioNBG14 [65]	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0
AntuoriHHEN21 [6]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ArmstrongGOS21 [7]	1	2	0	9	2	0	1	0	0	0	0	2	4	0	1	0	0	0	0	4	0	0	8	11	15	0	0	0	0	11
ArmstrongGOS22 [8]	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Astrand0F21 [11]	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BartoliniBBLM14 [19]	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BofillCSV17 [32]	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
BofillEGPSV14 [33]	0	0	0	0	0	0	0	0	0	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
BonfiettiZLM16 [38]	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
BoothNB16 [39]	0	3	1	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BoudreaultSLQ22 [40]	0	16	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	11	0	0	0	0	0	8
CauwelaertDMS16 [47]	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ref.	alternative constraint	cumulative	disjunctive	diffn	table constraint	regular expression	circuit	nooverlap	endbeforestart	alwaysin	span constraint	bin.?packing	cplex	gurobi	gecode	choco	mistral	or.?tools	OPL	CHIP	Z3	OZ	claire	cpo	chuffed	sicstus	eclipse	ilog solver	ilog scheduler	mini.?zinc
ColT19 [54]	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	36	0	0	0	0	0	10
DejemeppeCS15 [60]	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DerrienP14 [63]	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DerrienPZ14 [64]	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0
EfthymiouY23 [70]	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
FrimodigS19 [77]	0	2	0	0	0	3	0	0	0	0	0	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
GalleguillosKSB19 [79]	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
GayHLS15 [81]	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GayHS15 [82]	0	18	3	0	1	0	0	0	0	0	0	0	0	0	7	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0
GaySS14 [84]	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GeibingerKKMMW21 [85]	0	0	0	0	0	0	0	0	0	0	0	0	12	12	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1
GeitzGSSW22 [87]	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
GilesH16 [89]	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GoldwaserS17 [90]	0	2	2	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GroleazNS20 [97]	0	32	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	94	0	0	0	0	0	0
HanenKP21 [99]	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
He0GLW18 [100]	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HillTV21 [111]	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HoundjiSWD14 [118]	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JuvinHHL23 [120]	0	1	20	0	0	0	0	28	1	0	0	0	0	0	0	0	16	0	0	0	0	0	0	29	0	0	0	0	0	0
JuvinHL23 [121]	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
KameugneFND23 [125]	0	31	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0
KimCMLLP23 [131]	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
KlankeBYE21 [132]	0	4	1	0	0	0	7	5	0	0	0	0	1	1	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0
KovacsTKSG21 [141]	0	6	0	0	0	0	0	0	0	0	0	0	3	21	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0
KreterSS15 [142]	0	26	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	7	0	0	0	0	3
LacknerMMWW21 [148]	0	9	0	0	0	0	0	1	1	0	0	0	4	34	0	0	0	19	9	0	0	0	0	9	20	0	0	0	0	7
LimHTB16 [156]	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LiuCGM17 [159]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	12
LombardiBM15 [160]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mercier-AubinGQ20 [169]	0	8	2	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
MossigeGSMC17 [171]	0	22	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0
MurinR19 [173]	3	0	0	0	0	0	0	5	2	0	0	0	7	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
MurphyMB15 [174]	0	9	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NattafM20 [178]	0	3	0	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0
OuelletQ22 [182]	0	42	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PopovicCGNC22 [186]	0	2	0	0	0	0	0	6	0	6	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
PovedaAA23 [187]	0	8	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	8	0	0	0	0	5
Pralet17 [188]	0	14	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
SchuttS16 [203]	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1
SialaAH15 [207]	0	1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
SquillaciPR23 [213]	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SzerediS16 [214]	0	13	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	0	0	0	0	0	19	0	0	0	0	0	6
TangB20 [215]	0	0	0	0	0	0	0	0	2	4	1	15	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
TardivoDFMP23 [216]	0	46	2	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	1	0	0	0	0	0	0	0	0	0	13
Tesch16 [217]	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tesch18 [218]	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WessenCS20 [238]	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WinterMMW22 [239]	1	0	0	0	0	0	0	2	0	0	0	0	10	12	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0

Ref.	alternative constraint	cumulative	disjunctive	diffn	table constraint	regular expression	circuit	nooverlap	endbeforestart	alwaysin	span constraint	bin.?packing	cplex	gurobi	gecode	choco	mistral	or.?tools	OPL	CHIP	Z3	OZ	claire	cpo	chuffed	sicstus	eclipse	ilog solver	ilog scheduler	mini.?zinc	
YoungFS17 [243]	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9	
BaptisteP00 [15]	0	52	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	1	0	
BartakS11 [18]	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
BelhadjiI98 [24]	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BenediktMH20 [25]	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BensanaLV99 [28]	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
Caballero23 [42]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CampeauG22 [43]	0	3	0	0	0	0	0	1	2	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Darby-DowmanLMZ97 [57]	0	0	4	0	0	0	0	0	0	0	5	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	
FahimiOQ18 [73]	0	20	12	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HeinzSB13 [106]	0	87	1	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
HeinzSSW12 [105]	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
HeipckeCCS00 [107]	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hooker05 [113]	0	10	2	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	
Hooker06 [115]	0	14	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	0	
Kameugne15 [123]	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
KameugneFSN14 [127]	0	43	4	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
KoehlerBFFHPSSS21 [134]	0	1	75	0	0	0	1	0	0	0	0	0	114	36	0	0	0	66	20	0	47	0	0	0	52	0	0	0	0	43	
KovacsB11 [136]	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	
KovacsK11 [138]	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
KreterSS17 [143]	0	53	0	1	0	0	0	0	0	1	0	0	9	0	0	0	0	0	0	2	0	0	0	9	11	0	0	0	0	3	
LaborieRSV18 [147]	7	11	12	0	0	0	0	5	3	5	1	0	7	0	4	5	0	0	9	3	0	0	0	6	0	0	0	1	5	0	
LacknerMMWW23 [149]	1	17	1	0	0	0	0	5	1	0	0	1	4	82	0	0	0	23	17	0	0	0	0	11	27	0	0	0	0	46	
LetortCB15 [154]	0	18	0	0	0	0	0	0	0	0	0	15	0	0	0	7	0	0	0	1	0	0	0	0	0	6	0	0	0	0	
LimtanyakulS12 [158]	0	5	2	0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	
LombardiM12 [164]	0	7	21	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
LopesCSM10 [165]	0	0	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	
NattafAL15 [176]	0	8	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NattafAL17 [177]	0	12	17	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OzturkTHO13 [183]	0	2	19	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2	0	0	
PapaB98 [184]	0	6	29	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	
SakkoutW00 [195]	0	0	6	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
SchausHMCMD11 [196]	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SchildW00 [197]	0	0	5	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
SchuttFSW11 [202]	0	103	7	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	4	0	1	0	
Siala15 [206]	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SimoninAHL15 [209]	0	6	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Simonis07 [211]	0	15	1	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	1	0
VilimBC05 [233]	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wallace96 [235]	0	0	2	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	0	0	0	4	2	0	0	
WallaceY20 [236]	0	11	1	0	0	0	1	0	0	0	0	0	4	14	1	0	0	0	0	0	0	0	0	18	0	0	0	0	0	15	
Zhou97 [245]	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	

5 Examples from Books and Courses

Table 2: Problem Classification Types

Code	Name
JSSP	Job-Shop Scheduling Problem
JSPT	Job-Shop Scheduling Problem with Transportation
PP-MS-MMRCPPSP/max-cal	partially preemptive- multi-skill/mode resource-constrained project scheduling problem with generalized precedence relations and resource calendars
RCPSP	Resource Constrained Project Scheduling Problem
TMS	Transmission Network Maintenance Planning
PMSP	Parallel Machine Scheduling Problem
HFF	Hybrid Flexible Flow-shop
$HFFm tt C_{\max}$	Hybrid Flexible Flowshop with Transportation Times
OSP	Oven Scheduling Problem
PTC	Scheduling Problem with Time Constraints
GCSP	Group Cumulative Scheduling Problem
2BPHFSP	Two-Stage Bin Packing and Hybrid Flow Shop Scheduling Problem
CTW	Cable Tree Wiring Problem
CHSP	Cyclic Hoist Scheduling Problem
CECSP	Continuous Energy-Constrained Scheduling Problem
CuSP	Cumulative Scheduling Problem
SBSFMMAL	Simultaneous Balancing and Scheduling of Flexible Mixed Model Assembly Lines
SMSDP	steel mill slab design problem
KRFP	kernel resource feasibility problem
TCSP	Temporal Constraint Satisfaction Problem
PJSSP	Pre-emptive Job-Shop scheduling Problem
MGAP	Modified Generalized Assignment Problem
EOSP	Earth Observation Scheduling Problem
SCC	Steel-making and continuous casting

6 Benchmark Sets

6.1 CSPLib

Table 5: CSPLib scheduling problems

Nr	Name	Description	CP System	Data	Code	Solutions	Classification	Constraints
59	Energy Cost Aware Scheduling	Resource-Constrained Scheduling Problem	-	50 TXT	-	-	RCPSP	
61	RCPSP		PyCSP3	PSPLIB	y	PSPLIB		
73	Test Scheduling Problem		ECLiPSe	840 Prolog	y			
77	Stochastic Assignment and Scheduling Problem		OPL MiniZinc	9 DZN	y			

7 Other Examples

References

- [1] Younes Aalian, Gilles Pesant, and Michel Gamache. Optimization of short-term underground mine planning using constraint programming. In Roland H. C. Yap, editor, *29th International Conference on Principles and Practice of Constraint Programming, CP 2023, August 27-31, 2023, Toronto, Canada*, volume 280 of *LIPICs*, pages 6:1–6:16. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2023. URL: <https://doi.org/10.4230/LIPICs.CP.2023.6>, doi:10.4230/LIPICs.CP.2023.6.
- [2] Montserrat Abril, Miguel A. Salido, and Federico Barber. Distributed constraints for large-scale scheduling problems. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, page 837. Springer, 2005. doi:10.1007/11564751_75.
- [3] Rodrigo Acuna-Agost, Philippe Michelon, Dominique Feillet, and Serigne Gueye. Constraint programming and mixed integer linear programming for rescheduling trains under disrupted operations. In Willem Jan van Hoes and John N. Hooker, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 6th International Conference, CPAIOR 2009, Pittsburgh, PA, USA, May 27-31, 2009, Proceedings*, volume 5547 of *Lecture Notes in Computer Science*, pages 312–313. Springer, 2009. doi:10.1007/978-3-642-01929-6_24.
- [4] Penélope Aguiar-Melgarejo, Philippe Laborie, and Christine Solnon. A time-dependent no-overlap constraint: Application to urban delivery problems. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 1–17. Springer, 2015. doi:10.1007/978-3-319-18008-3_1.
- [5] Ola Angelsmark and Peter Jonsson. Some observations on durations, scheduling and allen’s algebra. In Rina Dechter, editor, *Principles and Practice of Constraint Programming - CP 2000, 6th International Conference, Singapore, September 18-21, 2000, Proceedings*, volume 1894 of *Lecture Notes in Computer Science*, pages 484–488. Springer, 2000. doi:10.1007/3-540-45349-0_35.
- [6] Valentin Antuori, Emmanuel Hebrard, Marie-José Huguet, Siham Essodaigui, and Alain Nguyen. Combining monte carlo tree search and depth first search methods for a car manufacturing workshop scheduling problem. In Laurent D. Michel, editor, *27th International Conference on Principles and Practice of Constraint Programming, CP 2021, Montpellier, France (Virtual Conference), October 25-29, 2021*, volume 210 of *LIPICs*, pages 14:1–14:16. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2021. URL: <https://doi.org/10.4230/LIPICs.CP.2021.14>, doi:10.4230/LIPICs.CP.2021.14.
- [7] Eddie Armstrong, Michele Garraffa, Barry O’Sullivan, and Helmut Simonis. The hybrid flexible flowshop with transportation times. In Laurent D. Michel, editor, *27th International Conference on Principles and Practice of Constraint Programming, CP 2021, Montpellier, France (Virtual Conference), October 25-29, 2021*, volume 210 of *LIPICs*, pages 16:1–16:18. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2021. URL: <https://doi.org/10.4230/LIPICs.CP.2021.16>, doi:10.4230/LIPICs.CP.2021.16.
- [8] Eddie Armstrong, Michele Garraffa, Barry O’Sullivan, and Helmut Simonis. A two-phase hybrid approach for the hybrid flexible flowshop with transportation times. In Pierre Schaus, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 19th International Conference, CPAIOR 2022, Los Angeles, CA, USA, June 20-23, 2022, Proceedings*, volume 13292 of *Lecture Notes in Computer Science*, pages 1–13. Springer, 2022. doi:10.1007/978-3-031-08011-1_1.
- [9] Christian Artigues, Sana Belmokhtar, and Dominique Feillet. A new exact solution algorithm for the job shop problem with sequence-dependent setup times. In Jean-Charles Régin and Michel Rueher, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, First International Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings*, volume 3011 of *Lecture Notes in Computer Science*, pages 37–49. Springer, 2004. doi:10.1007/978-3-540-24664-0_3.

- [10] Konstantin Artiouchine and Philippe Baptiste. Inter-distance constraint: An extension of the all-different constraint for scheduling equal length jobs. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 62–76. Springer, 2005. doi:10.1007/11564751_8.
- [11] Max Åstrand, Mikael Johansson, and Hamid Reza Feyzmahdavian. Short-term scheduling of production fleets in underground mines using cp-based LNS. In Peter J. Stuckey, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 18th International Conference, CPAIOR 2021, Vienna, Austria, July 5-8, 2021, Proceedings*, volume 12735 of *Lecture Notes in Computer Science*, pages 365–382. Springer, 2021. doi:10.1007/978-3-030-78230-6_23.
- [12] Max Åstrand, Mikael Johansson, and Alessandro Zanzarini. Fleet scheduling in underground mines using constraint programming. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 605–613. Springer, 2018. doi:10.1007/978-3-319-93031-2_44.
- [13] Philippe Baptiste. Constraint-based schedulers, do they really work? In Ian P. Gent, editor, *Principles and Practice of Constraint Programming - CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20-24, 2009, Proceedings*, volume 5732 of *Lecture Notes in Computer Science*, page 1. Springer, 2009. doi:10.1007/978-3-642-04244-7_1.
- [14] Philippe Baptiste and Claude Le Pape. Constraint propagation and decomposition techniques for highly disjunctive and highly cumulative project scheduling problems. In Gert Smolka, editor, *Principles and Practice of Constraint Programming - CP97, Third International Conference, Linz, Austria, October 29 - November 1, 1997, Proceedings*, volume 1330 of *Lecture Notes in Computer Science*, pages 375–389. Springer, 1997. URL: <https://doi.org/10.1007/BFb0017454>, doi:10.1007/BFb0017454.
- [15] Philippe Baptiste and Claude Le Pape. Constraint propagation and decomposition techniques for highly disjunctive and highly cumulative project scheduling problems. *Constraints An Int. J.*, 5(1/2):119–139, 2000. doi:10.1023/A:1009822502231.
- [16] Ada Barlatt, Amy Mainville Cohn, and Oleg Yu. Gusikhin. A hybrid approach for solving shift-selection and task-sequencing problems. In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 288–292. Springer, 2008. doi:10.1007/978-3-540-68155-7_24.
- [17] Roman Barták. Visopt shopfloor: On the edge of planning and scheduling. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 587–602. Springer, 2002. doi:10.1007/3-540-46135-3_39.
- [18] Roman Barták and Miguel A. Salido. Constraint satisfaction for planning and scheduling problems. *Constraints An Int. J.*, 16(3):223–227, 2011. URL: <https://doi.org/10.1007/s10601-011-9109-4>, doi:10.1007/S10601-011-9109-4.
- [19] Andrea Bartolini, Andrea Borghesi, Thomas Bridi, Michele Lombardi, and Michela Milano. Proactive workload dispatching on the EURORA supercomputer. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014, Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 765–780. Springer, 2014. doi:10.1007/978-3-319-10428-7_55.
- [20] J. Christopher Beck, Andrew J. Davenport, and Mark S. Fox. Five pitfalls of empirical scheduling research. In Gert Smolka, editor, *Principles and Practice of Constraint Programming - CP97, Third International Conference, Linz, Austria, October 29 - November 1, 1997, Proceedings*, volume 1330 of *Lecture Notes in Computer Science*, pages 390–404. Springer, 1997. URL: <https://doi.org/10.1007/BFb0017455>, doi:10.1007/BFb0017455.

- [21] Nicolas Beldiceanu and Mats Carlsson. A new multi-resource cumulatives constraint with negative heights. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 63–79. Springer, 2002. doi:10.1007/3-540-46135-3_5.
- [22] Nicolas Beldiceanu, Mats Carlsson, and Emmanuel Poder. New filtering for the cumulative constraint in the context of non-overlapping rectangles. In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 21–35. Springer, 2008. doi:10.1007/978-3-540-68155-7_5.
- [23] Nicolas Beldiceanu and Emmanuel Poder. A continuous multi-resources *cumulative* constraint with positive-negative resource consumption-production. In Pascal Van Hentenryck and Laurence A. Wolsey, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 4th International Conference, CPAIOR 2007, Brussels, Belgium, May 23-26, 2007, Proceedings*, volume 4510 of *Lecture Notes in Computer Science*, pages 214–228. Springer, 2007. doi:10.1007/978-3-540-72397-4_16.
- [24] Said Belhadji and Amar Isli. Temporal constraint satisfaction techniques in job shop scheduling problem solving. *Constraints An Int. J.*, 3(2/3):203–211, 1998. doi:10.1023/A:1009777711218.
- [25] Ondrej Benedikt, István Módos, and Zdenek Hanzálek. Power of pre-processing: production scheduling with variable energy pricing and power-saving states. *Constraints An Int. J.*, 25(3-4):300–318, 2020. URL: <https://doi.org/10.1007/s10601-020-09317-y>, doi:10.1007/S10601-020-09317-Y.
- [26] Ondrej Benedikt, Premysl Sucha, István Módos, Marek Vlk, and Zdenek Hanzálek. Energy-aware production scheduling with power-saving modes. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 72–81. Springer, 2018. doi:10.1007/978-3-319-93031-2_6.
- [27] Luca Benini, Davide Bertozzi, Alessio Guerri, and Michela Milano. Allocation, scheduling and voltage scaling on energy aware mpsoes. In J. Christopher Beck and Barbara M. Smith, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Third International Conference, CPAIOR 2006, Cork, Ireland, May 31 - June 2, 2006, Proceedings*, volume 3990 of *Lecture Notes in Computer Science*, pages 44–58. Springer, 2006. doi:10.1007/11757375_6.
- [28] E. Bensana, Michel Lemaître, and Gérard Verfaillie. Earth observation satellite management. *Constraints An Int. J.*, 4(3):293–299, 1999. doi:10.1023/A:1026488509554.
- [29] Timo Berthold, Stefan Heinz, Marco E. Lübbecke, Rolf H. Möhring, and Jens Schulz. A constraint integer programming approach for resource-constrained project scheduling. In Andrea Lodi, Michela Milano, and Paolo Toth, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010, Bologna, Italy, June 14-18, 2010. Proceedings*, volume 6140 of *Lecture Notes in Computer Science*, pages 313–317. Springer, 2010. doi:10.1007/978-3-642-13520-0_34.
- [30] Christian Bessiere, Emmanuel Hebrard, Marc-André Ménard, Claude-Guy Quimper, and Toby Walsh. Buffered resource constraint: Algorithms and complexity. In Helmut Simonis, editor, *Integration of AI and OR Techniques in Constraint Programming - 11th International Conference, CPAIOR 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, volume 8451 of *Lecture Notes in Computer Science*, pages 318–333. Springer, 2014. doi:10.1007/978-3-319-07046-9_23.
- [31] Jean-Charles Billaut, Emmanuel Hebrard, and Pierre Lopez. Complete characterization of near-optimal sequences for the two-machine flow shop scheduling problem. In Nicolas Beldiceanu, Narendra Jussien, and Eric Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial*

- Optimization Problems - 9th International Conference, CPAIOR 2012, Nantes, France, May 28 - June 1, 2012. Proceedings*, volume 7298 of *Lecture Notes in Computer Science*, pages 66–80. Springer, 2012. doi:10.1007/978-3-642-29828-8_5.
- [32] Miquel Bofill, Jordi Coll, Josep Suy, and Mateu Villaret. An efficient SMT approach to solve mrcpsp/max instances with tight constraints on resources. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 71–79. Springer, 2017. doi:10.1007/978-3-319-66158-2_5.
 - [33] Miquel Bofill, Joan Espasa, Marc Garcia, Miquel Palahí, Josep Suy, and Mateu Villaret. Scheduling B2B meetings. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 781–796. Springer, 2014. doi:10.1007/978-3-319-10428-7_56.
 - [34] Miquel Bofill, Marc Garcia, Josep Suy, and Mateu Villaret. Maxsat-based scheduling of B2B meetings. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 65–73. Springer, 2015. doi:10.1007/978-3-319-18008-3_5.
 - [35] Alessio Bonfietti, Michele Lombardi, Luca Benini, and Michela Milano. A constraint based approach to cyclic RCPSP. In Jimmy Ho-Man Lee, editor, *Principles and Practice of Constraint Programming - CP 2011 - 17th International Conference, CP 2011, Perugia, Italy, September 12-16, 2011. Proceedings*, volume 6876 of *Lecture Notes in Computer Science*, pages 130–144. Springer, 2011. doi:10.1007/978-3-642-23786-7_12.
 - [36] Alessio Bonfietti, Michele Lombardi, Luca Benini, and Michela Milano. Global cyclic cumulative constraint. In Nicolas Beldiceanu, Narendra Jussien, and Eric Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 9th International Conference, CPAIOR 2012, Nantes, France, May 28 - June 1, 2012. Proceedings*, volume 7298 of *Lecture Notes in Computer Science*, pages 81–96. Springer, 2012. doi:10.1007/978-3-642-29828-8_6.
 - [37] Alessio Bonfietti, Michele Lombardi, and Michela Milano. Disregarding duration uncertainty in partial order schedules? yes, we can! In Helmut Simonis, editor, *Integration of AI and OR Techniques in Constraint Programming - 11th International Conference, CPAIOR 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, volume 8451 of *Lecture Notes in Computer Science*, pages 210–225. Springer, 2014. doi:10.1007/978-3-319-07046-9_15.
 - [38] Alessio Bonfietti, Alessandro Zanarini, Michele Lombardi, and Michela Milano. The multirate resource constraint. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 113–129. Springer, 2016. doi:10.1007/978-3-319-44953-1_8.
 - [39] Kyle E. C. Booth, Goldie Nejat, and J. Christopher Beck. A constraint programming approach to multi-robot task allocation and scheduling in retirement homes. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 539–555. Springer, 2016. doi:10.1007/978-3-319-44953-1_34.
 - [40] Raphaël Boudreault, Vanessa Simard, Daniel Lafond, and Claude-Guy Quimper. A constraint programming approach to ship refit project scheduling. In Christine Solmon, editor, *28th International Conference on Principles and Practice of Constraint Programming, CP 2022, July 31 to August 8, 2022, Haifa, Israel*, volume 235 of *LIPICs*, pages 10:1–10:16. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022. URL: <https://doi.org/10.4230/LIPICs.CP.2022.10>, doi:10.4230/LIPICs.CP.2022.10.
 - [41] Christina N. Burt, Nir Lipovetzky, Adrian R. Pearce, and Peter J. Stuckey. Scheduling with fixed maintenance, shared resources and nonlinear feedrate constraints: A mine planning case study. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 91–107. Springer, 2015. doi:10.1007/978-3-319-18008-3_7.

- [42] Jordi Coll Caballero. Scheduling through logic-based tools. *Constraints An Int. J.*, 28(3):510, 2023. URL: <https://doi.org/10.1007/s10601-023-09357-0>, doi:10.1007/S10601-023-09357-0.
- [43] Louis-Pierre Campeau and Michel Gamache. Short- and medium-term optimization of underground mine planning using constraint programming. *Constraints An Int. J.*, 27(4):414–431, 2022. URL: <https://doi.org/10.1007/s10601-022-09337-w>, doi:10.1007/S10601-022-09337-W.
- [44] Quentin Cappart and Pierre Schaus. Rescheduling railway traffic on real time situations using time-interval variables. In Domenico Salvagnin and Michele Lombardi, editors, *Integration of AI and OR Techniques in Constraint Programming - 14th International Conference, CPAIOR 2017, Padua, Italy, June 5-8, 2017, Proceedings*, volume 10335 of *Lecture Notes in Computer Science*, pages 312–327. Springer, 2017. doi:10.1007/978-3-319-59776-8_26.
- [45] Tom Carchrae, J. Christopher Beck, and Eugene C. Freuder. Methods to learn abstract scheduling models. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, page 842. Springer, 2005. doi:10.1007/11564751_80.
- [46] Yves Caseau. Using constraint propagation for complex scheduling problems: Managing size, complex resources and travel. In Gert Smolka, editor, *Principles and Practice of Constraint Programming - CP97, Third International Conference, Linz, Austria, October 29 - November 1, 1997, Proceedings*, volume 1330 of *Lecture Notes in Computer Science*, pages 163–166. Springer, 1997. URL: <https://doi.org/10.1007/BFb0017437>, doi:10.1007/BFB0017437.
- [47] Sascha Van Cauwelaert, Cyrille Dejemeppe, Jean-Noël Monette, and Pierre Schaus. Efficient filtering for the unary resource with family-based transition times. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 520–535. Springer, 2016. doi:10.1007/978-3-319-44953-1_33.
- [48] Amedeo Cesta, Angelo Oddi, and Stephen F. Smith. Scheduling multi-capacitated resources under complex temporal constraints. In Michael J. Maher and Jean-Francois Puget, editors, *Principles and Practice of Constraint Programming - CP98, 4th International Conference, Pisa, Italy, October 26-30, 1998, Proceedings*, volume 1520 of *Lecture Notes in Computer Science*, page 465. Springer, 1998. doi:10.1007/3-540-49481-2_36.
- [49] Nicolas Chapados, Marc Joliveau, and Louis-Martin Rousseau. Retail store workforce scheduling by expected operating income maximization. In Tobias Achterberg and J. Christopher Beck, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23-27, 2011. Proceedings*, volume 6697 of *Lecture Notes in Computer Science*, pages 53–58. Springer, 2011. doi:10.1007/978-3-642-21311-3_7.
- [50] Yingyi Chu and Quanshi Xia. A hybrid algorithm for a class of resource constrained scheduling problems. In Roman Barták and Michela Milano, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Second International Conference, CPAIOR 2005, Prague, Czech Republic, May 30 - June 1, 2005, Proceedings*, volume 3524 of *Lecture Notes in Computer Science*, pages 110–124. Springer, 2005. doi:10.1007/11493853_10.
- [51] André A. Ciré, Elvin Coban, and John N. Hooker. Mixed integer programming vs. logic-based benders decomposition for planning and scheduling. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 325–331. Springer, 2013. doi:10.1007/978-3-642-38171-3_22.
- [52] Alexis De Clercq, Thierry Petit, Nicolas Beldiceanu, and Narendra Jussien. Filtering algorithms for discrete cumulative problems with overloads of resource. In Jimmy Ho-Man Lee, editor, *Principles and Practice of Constraint Programming - CP 2011 - 17th International Conference, CP 2011, Perugia, Italy, September 12-16, 2011. Proceedings*, volume 6876 of *Lecture Notes in Computer Science*, pages 240–255. Springer, 2011. doi:10.1007/978-3-642-23786-7_20.

- [53] Elvin Coban and John N. Hooker. Single-facility scheduling over long time horizons by logic-based benders decomposition. In Andrea Lodi, Michela Milano, and Paolo Toth, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010, Bologna, Italy, June 14-18, 2010. Proceedings*, volume 6140 of *Lecture Notes in Computer Science*, pages 87–91. Springer, 2010. doi:10.1007/978-3-642-13520-0_11.
- [54] Giacomo Da Col and Erich Christian Teppan. Industrial size job shop scheduling tackled by present day CP solvers. In Thomas Schiex and Simon de Givry, editors, *Principles and Practice of Constraint Programming - 25th International Conference, CP 2019, Stamford, CT, USA, September 30 - October 4, 2019, Proceedings*, volume 11802 of *Lecture Notes in Computer Science*, pages 144–160. Springer, 2019. doi:10.1007/978-3-030-30048-7_9.
- [55] Yves Colombani. Constraint programming: an efficient and practical approach to solving the job-shop problem. In Eugene C. Freuder, editor, *Proceedings of the Second International Conference on Principles and Practice of Constraint Programming, Cambridge, Massachusetts, USA, August 19-22, 1996*, volume 1118 of *Lecture Notes in Computer Science*, pages 149–163. Springer, 1996. doi:10.1007/3-540-61551-2_72.
- [56] Emilie Danna and Laurent Perron. Structured vs. unstructured large neighborhood search: A case study on job-shop scheduling problems with earliness and tardiness costs. In Francesca Rossi, editor, *Principles and Practice of Constraint Programming - CP 2003, 9th International Conference, CP 2003, Kinsale, Ireland, September 29 - October 3, 2003, Proceedings*, volume 2833 of *Lecture Notes in Computer Science*, pages 817–821. Springer, 2003. doi:10.1007/978-3-540-45193-8_59.
- [57] Ken Darby-Dowman, James Little, Gautam Mitra, and Marco Zaffalon. Constraint logic programming and integer programming approaches and their collaboration in solving an assignment scheduling problem. *Constraints An Int. J.*, 1(3):245–264, 1997. doi:10.1007/BF00137871.
- [58] Andrew J. Davenport. Integrated maintenance scheduling for semiconductor manufacturing. In Andrea Lodi, Michela Milano, and Paolo Toth, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010, Bologna, Italy, June 14-18, 2010. Proceedings*, volume 6140 of *Lecture Notes in Computer Science*, pages 92–96. Springer, 2010. doi:10.1007/978-3-642-13520-0_12.
- [59] Andrew J. Davenport, Jayant Kalagnanam, Chandra Reddy, Stuart Siegel, and John Hou. An application of constraint programming to generating detailed operations schedules for steel manufacturing. In Christian Bessiere, editor, *Principles and Practice of Constraint Programming - CP 2007, 13th International Conference, CP 2007, Providence, RI, USA, September 23-27, 2007, Proceedings*, volume 4741 of *Lecture Notes in Computer Science*, pages 64–76. Springer, 2007. doi:10.1007/978-3-540-74970-7_7.
- [60] Cyrille Dejemeppe, Sascha Van Cauwelaert, and Pierre Schaus. The unary resource with transition times. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 89–104. Springer, 2015. doi:10.1007/978-3-319-23219-5_7.
- [61] Cyrille Dejemeppe and Yves Deville. Continuously degrading resource and interval dependent activity durations in nuclear medicine patient scheduling. In Helmut Simonis, editor, *Integration of AI and OR Techniques in Constraint Programming - 11th International Conference, CPAIOR 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, volume 8451 of *Lecture Notes in Computer Science*, pages 284–292. Springer, 2014. doi:10.1007/978-3-319-07046-9_20.
- [62] Emir Demirovic and Peter J. Stuckey. Constraint programming for high school timetabling: A scheduling-based model with hot starts. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 135–152. Springer, 2018. doi:10.1007/978-3-319-93031-2_10.
- [63] Alban Derrien and Thierry Petit. A new characterization of relevant intervals for energetic reasoning. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 289–297. Springer, 2014. doi:10.1007/978-3-319-10428-7_22.

- [64] Alban Derrien, Thierry Petit, and Stéphane Zampelli. A declarative paradigm for robust cumulative scheduling. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 298–306. Springer, 2014. doi:10.1007/978-3-319-10428-7_23.
- [65] Stefano Di Alesio, Shiva Nejati, Lionel C. Briand, and Arnaud Gotlieb. Worst-case scheduling of software tasks - A constraint optimization model to support performance testing. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 813–830. Springer, 2014. doi:10.1007/978-3-319-10428-7_58.
- [66] Bistra Dilkina, Lei Duan, and William S. Havens. Extending systematic local search for job shop scheduling problems. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 762–766. Springer, 2005. doi:10.1007/11564751_60.
- [67] Grégoire Doms and Pascal Van Hentenryck. Gap reduction techniques for online stochastic project scheduling. In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 66–81. Springer, 2008. doi:10.1007/978-3-540-68155-7_8.
- [68] Seyed Hossein Hashemi Doulabi, Louis-Martin Rousseau, and Gilles Pesant. A constraint programming-based column generation approach for operating room planning and scheduling. In Helmut Simonis, editor, *Integration of AI and OR Techniques in Constraint Programming - 11th International Conference, CPAIOR 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, volume 8451 of *Lecture Notes in Computer Science*, pages 455–463. Springer, 2014. doi:10.1007/978-3-319-07046-9_32.
- [69] Emrah B. Edis and Ceyda Oguz. Parallel machine scheduling with additional resources: A lagrangian-based constraint programming approach. In Tobias Achterberg and J. Christopher Beck, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23-27, 2011. Proceedings*, volume 6697 of *Lecture Notes in Computer Science*, pages 92–98. Springer, 2011. doi:10.1007/978-3-642-21311-3_10.
- [70] Nikolaos Efthymiou and Neil Yorke-Smith. Predicting the optimal period for cyclic hoist scheduling problems. In André A. Ciré, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 20th International Conference, CPAIOR 2023, Nice, France, May 29 - June 1, 2023, Proceedings*, volume 13884 of *Lecture Notes in Computer Science*, pages 238–253. Springer, 2023. doi:10.1007/978-3-031-33271-5_16.
- [71] Abdallah Elkhyari, Christelle Guéret, and Narendra Jussien. Conflict-based repair techniques for solving dynamic scheduling problems. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 702–707. Springer, 2002. doi:10.1007/3-540-46135-3_49.
- [72] Caroline Even, Andreas Schutt, and Pascal Van Hentenryck. A constraint programming approach for non-preemptive evacuation scheduling. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 574–591. Springer, 2015. doi:10.1007/978-3-319-23219-5_40.
- [73] Hamed Fahimi, Yanick Ouellet, and Claude-Guy Quimper. Linear-time filtering algorithms for the disjunctive constraint and a quadratic filtering algorithm for the cumulative not-first not-last. *Constraints An Int. J.*, 23(3):272–293, 2018. URL: <https://doi.org/10.1007/s10601-018-9282-9>, doi:10.1007/S10601-018-9282-9.
- [74] Daniel Fontaine, Laurent D. Michel, and Pascal Van Hentenryck. Parallel composition of scheduling solvers. In Claude-Guy Quimper, editor, *Integration of AI and OR Techniques in Constraint Programming - 13th International Conference, CPAIOR 2016, Banff, AB, Canada, May 29 - June 1, 2016, Proceedings*, volume 9676 of *Lecture Notes in Computer Science*, pages 159–169. Springer, 2016. doi:10.1007/978-3-319-33954-2_12.

- [75] Jérôme Fortin, Pawel Zielinski, Didier Dubois, and Hélène Fargier. Interval analysis in scheduling. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 226–240. Springer, 2005. doi:10.1007/11564751_19.
- [76] Jeremy Frank and Elif Kürklü. Mixed discrete and continuous algorithms for scheduling airborne astronomy observations. In Roman Barták and Michela Milano, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Second International Conference, CPAIOR 2005, Prague, Czech Republic, May 30 - June 1, 2005, Proceedings*, volume 3524 of *Lecture Notes in Computer Science*, pages 183–200. Springer, 2005. doi:10.1007/11493853_15.
- [77] Sara Frimodig and Christian Schulte. Models for radiation therapy patient scheduling. In Thomas Schiex and Simon de Givry, editors, *Principles and Practice of Constraint Programming - 25th International Conference, CP 2019, Stamford, CT, USA, September 30 - October 4, 2019, Proceedings*, volume 11802 of *Lecture Notes in Computer Science*, pages 421–437. Springer, 2019. doi:10.1007/978-3-030-30048-7_25.
- [78] Daniel Frost and Rina Dechter. Optimizing with constraints: A case study in scheduling maintenance of electric power units. In Michael J. Maher and Jean-Francois Puget, editors, *Principles and Practice of Constraint Programming - CP98, 4th International Conference, Pisa, Italy, October 26-30, 1998, Proceedings*, volume 1520 of *Lecture Notes in Computer Science*, page 469. Springer, 1998. doi:10.1007/3-540-49481-2_40.
- [79] Cristian Galleguillos, Zeynep Kiziltan, Alina Sirbu, and Özalp Babaoglu. Constraint programming-based job dispatching for modern HPC applications. In Thomas Schiex and Simon de Givry, editors, *Principles and Practice of Constraint Programming - 25th International Conference, CP 2019, Stamford, CT, USA, September 30 - October 4, 2019, Proceedings*, volume 11802 of *Lecture Notes in Computer Science*, pages 438–455. Springer, 2019. doi:10.1007/978-3-030-30048-7_26.
- [80] Antoine Gargani and Philippe Refalo. An efficient model and strategy for the steel mill slab design problem. In Christian Bessiere, editor, *Principles and Practice of Constraint Programming - CP 2007, 13th International Conference, CP 2007, Providence, RI, USA, September 23-27, 2007, Proceedings*, volume 4741 of *Lecture Notes in Computer Science*, pages 77–89. Springer, 2007. doi:10.1007/978-3-540-74970-7_8.
- [81] Steven Gay, Renaud Hartert, Christophe Lecoutre, and Pierre Schaus. Conflict ordering search for scheduling problems. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 140–148. Springer, 2015. doi:10.1007/978-3-319-23219-5_10.
- [82] Steven Gay, Renaud Hartert, and Pierre Schaus. Simple and scalable time-table filtering for the cumulative constraint. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 149–157. Springer, 2015. doi:10.1007/978-3-319-23219-5_11.
- [83] Steven Gay, Renaud Hartert, and Pierre Schaus. Time-table disjunctive reasoning for the cumulative constraint. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 157–172. Springer, 2015. doi:10.1007/978-3-319-18008-3_11.
- [84] Steven Gay, Pierre Schaus, and Vivian De Smedt. Continuous casting scheduling with constraint programming. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 831–845. Springer, 2014. doi:10.1007/978-3-319-10428-7_59.
- [85] Tobias Geibinger, Lucas Kletzander, Matthias Krainz, Florian Mischek, Nysret Musliu, and Felix Winter. Physician scheduling during a pandemic. In Peter J. Stuckey, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 18th International Conference, CPAIOR 2021, Vienna, Austria, July 5-8, 2021, Proceedings*, volume 12735 of *Lecture Notes in Computer Science*, pages 456–465. Springer, 2021. doi:10.1007/978-3-030-78230-6_29.

- [86] Tobias Geibinger, Florian Mischek, and Nysret Musliu. Investigating constraint programming for real world industrial test laboratory scheduling. In Louis-Martin Rousseau and Kostas Stergiou, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 16th International Conference, CPAIOR 2019, Thessaloniki, Greece, June 4-7, 2019, Proceedings*, volume 11494 of *Lecture Notes in Computer Science*, pages 304–319. Springer, 2019. doi:10.1007/978-3-030-19212-9_20.
- [87] Marc Geitz, Cristian Grozea, Wolfgang Steigerwald, Robin Stöhr, and Armin Wolf. Solving the extended job shop scheduling problem with agvs - classical and quantum approaches. In Pierre Schaus, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 19th International Conference, CPAIOR 2022, Los Angeles, CA, USA, June 20-23, 2022, Proceedings*, volume 13292 of *Lecture Notes in Computer Science*, pages 120–137. Springer, 2022. doi:10.1007/978-3-031-08011-1_10.
- [88] Mirco Gelain, Maria Silvia Pini, Francesca Rossi, Kristen Brent Venable, and Toby Walsh. A local search approach for incomplete soft constraint problems: Experimental results on meeting scheduling problems. In Domenico Salvagnin and Michele Lombardi, editors, *Integration of AI and OR Techniques in Constraint Programming - 14th International Conference, CPAIOR 2017, Padua, Italy, June 5-8, 2017, Proceedings*, volume 10335 of *Lecture Notes in Computer Science*, pages 403–418. Springer, 2017. doi:10.1007/978-3-319-59776-8_32.
- [89] Katherine Giles and Willem-Jan van Hoeve. Solving a supply-delivery scheduling problem with constraint programming. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 602–617. Springer, 2016. doi:10.1007/978-3-319-44953-1_38.
- [90] Adrian Goldwaser and Andreas Schutt. Optimal torpedo scheduling. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 338–353. Springer, 2017. doi:10.1007/978-3-319-66158-2_22.
- [91] Hans-Joachim Goltz. Reducing domains for search in CLP(FD) and its application to job-shop scheduling. In Ugo Montanari and Francesca Rossi, editors, *Principles and Practice of Constraint Programming - CP’95, First International Conference, CP’95, Cassis, France, September 19-22, 1995, Proceedings*, volume 976 of *Lecture Notes in Computer Science*, pages 549–562. Springer, 1995. doi:10.1007/3-540-60299-2_33.
- [92] Diarmuid Grimes and Emmanuel Hebrard. Job shop scheduling with setup times and maximal time-lags: A simple constraint programming approach. In Andrea Lodi, Michela Milano, and Paolo Toth, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 7th International Conference, CPAIOR 2010, Bologna, Italy, June 14-18, 2010. Proceedings*, volume 6140 of *Lecture Notes in Computer Science*, pages 147–161. Springer, 2010. doi:10.1007/978-3-642-13520-0_19.
- [93] Diarmuid Grimes and Emmanuel Hebrard. Models and strategies for variants of the job shop scheduling problem. In Jimmy Ho-Man Lee, editor, *Principles and Practice of Constraint Programming - CP 2011 - 17th International Conference, CP 2011, Perugia, Italy, September 12-16, 2011. Proceedings*, volume 6876 of *Lecture Notes in Computer Science*, pages 356–372. Springer, 2011. doi:10.1007/978-3-642-23786-7_28.
- [94] Diarmuid Grimes, Emmanuel Hebrard, and Arnaud Malapert. Closing the open shop: Contradicting conventional wisdom. In Ian P. Gent, editor, *Principles and Practice of Constraint Programming - CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20-24, 2009, Proceedings*, volume 5732 of *Lecture Notes in Computer Science*, pages 400–408. Springer, 2009. doi:10.1007/978-3-642-04244-7_33.
- [95] Diarmuid Grimes, Georgiana Ifrim, Barry O’Sullivan, and Helmut Simonis. Analyzing the impact of electricity price forecasting on energy cost-aware scheduling. *Sustain. Comput. Informatics Syst.*, 4(4):276–291, 2014. URL: <https://doi.org/10.1016/j.suscom.2014.08.009>, doi:10.1016/J.SUSCOM.2014.08.009.

- [96] Lucas Groleaz, Samba Ndojh Ndiaye, and Christine Solnon. ACO with automatic parameter selection for a scheduling problem with a group cumulative constraint. In Carlos Artemio Coello Coello, editor, *GECCO '20: Genetic and Evolutionary Computation Conference, Cancún Mexico, July 8-12, 2020*, pages 13–21. ACM, 2020. doi:10.1145/3377930.3389818.
- [97] Lucas Groleaz, Samba Ndojh Ndiaye, and Christine Solnon. Solving the group cumulative scheduling problem with CPO and ACO. In Helmut Simonis, editor, *Principles and Practice of Constraint Programming - 26th International Conference, CP 2020, Louvain-la-Neuve, Belgium, September 7-11, 2020, Proceedings*, volume 12333 of *Lecture Notes in Computer Science*, pages 620–636. Springer, 2020. doi:10.1007/978-3-030-58475-7_36.
- [98] Hanyu Gu, Andreas Schutt, and Peter J. Stuckey. A lagrangian relaxation based forward-backward improvement heuristic for maximising the net present value of resource-constrained projects. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 340–346. Springer, 2013. doi:10.1007/978-3-642-38171-3_24.
- [99] Claire Hanen, Alix Munier Kordon, and Theo Pedersen. Two deadline reduction algorithms for scheduling dependent tasks on parallel processors. In Peter J. Stuckey, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 18th International Conference, CPAIOR 2021, Vienna, Austria, July 5-8, 2021, Proceedings*, volume 12735 of *Lecture Notes in Computer Science*, pages 214–230. Springer, 2021. doi:10.1007/978-3-030-78230-6_14.
- [100] Shan He, Mark Wallace, Graeme Gange, Ariel Liebman, and Campbell Wilson. A fast and scalable algorithm for scheduling large numbers of devices under real-time pricing. In John N. Hooker, editor, *Principles and Practice of Constraint Programming - 24th International Conference, CP 2018, Lille, France, August 27-31, 2018, Proceedings*, volume 11008 of *Lecture Notes in Computer Science*, pages 649–666. Springer, 2018. doi:10.1007/978-3-319-98334-9_42.
- [101] Emmanuel Hebrard, Paul Tyler, and Toby Walsh. Computing super-schedules. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 879–879. Springer, 2005. doi:10.1007/11564751_117.
- [102] Aliza R. Heching and John N. Hooker. Scheduling home hospice care with logic-based benders decomposition. In Claude-Guy Quimper, editor, *Integration of AI and OR Techniques in Constraint Programming - 13th International Conference, CPAIOR 2016, Banff, AB, Canada, May 29 - June 1, 2016, Proceedings*, volume 9676 of *Lecture Notes in Computer Science*, pages 187–197. Springer, 2016. doi:10.1007/978-3-319-33954-2_14.
- [103] Stefan Heinz and J. Christopher Beck. Reconsidering mixed integer programming and mip-based hybrids for scheduling. In Nicolas Beldiceanu, Narendra Jussien, and Eric Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 9th International Conference, CPAIOR 2012, Nantes, France, May 28 - June 1, 2012. Proceedings*, volume 7298 of *Lecture Notes in Computer Science*, pages 211–227. Springer, 2012. doi:10.1007/978-3-642-29828-8_14.
- [104] Stefan Heinz, Wen-Yang Ku, and J. Christopher Beck. Recent improvements using constraint integer programming for resource allocation and scheduling. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 12–27. Springer, 2013. doi:10.1007/978-3-642-38171-3_2.
- [105] Stefan Heinz, Thomas Schlechte, Rüdiger Stephan, and Michael Winkler. Solving steel mill slab design problems. *Constraints An Int. J.*, 17(1):39–50, 2012. URL: <https://doi.org/10.1007/s10601-011-9113-8>, doi:10.1007/S10601-011-9113-8.
- [106] Stefan Heinz, Jens Schulz, and J. Christopher Beck. Using dual presolving reductions to reformulate cumulative constraints. *Constraints An Int. J.*, 18(2):166–201, 2013. URL: <https://doi.org/10.1007/s10601-012-9136-9>, doi:10.1007/S10601-012-9136-9.

- [107] Susanne Heipcke, Yves Colombani, Cristina C. B. Cavalcante, and Cid C. de Souza. Scheduling under labour resource constraints. *Constraints An Int. J.*, 5(4):415–422, 2000. doi:10.1023/A:1009860311452.
- [108] Pascal Van Hentenryck and Laurent Michel. Scheduling abstractions for local search. In Jean-Charles Régin and Michel Rueher, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, First International Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings*, volume 3011 of *Lecture Notes in Computer Science*, pages 319–334. Springer, 2004. doi:10.1007/978-3-540-24664-0_22.
- [109] Pascal Van Hentenryck and Laurent Michel. The steel mill slab design problem revisited. In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 377–381. Springer, 2008. doi:10.1007/978-3-540-68155-7_41.
- [110] Fabien Hermenier, Sophie Demasse, and Xavier Lorca. Bin repacking scheduling in virtualized datacenters. In Jimmy Ho-Man Lee, editor, *Principles and Practice of Constraint Programming - CP 2011 - 17th International Conference, CP 2011, Perugia, Italy, September 12-16, 2011. Proceedings*, volume 6876 of *Lecture Notes in Computer Science*, pages 27–41. Springer, 2011. doi:10.1007/978-3-642-23786-7_5.
- [111] Alessandro Hill, Jordan Ticktin, and Thomas W. M. Vossen. A computational study of constraint programming approaches for resource-constrained project scheduling with autonomous learning effects. In Peter J. Stuckey, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 18th International Conference, CPAIOR 2021, Vienna, Austria, July 5-8, 2021, Proceedings*, volume 12735 of *Lecture Notes in Computer Science*, pages 26–44. Springer, 2021. doi:10.1007/978-3-030-78230-6_2.
- [112] John N. Hooker. A hybrid method for planning and scheduling. In Mark Wallace, editor, *Principles and Practice of Constraint Programming - CP 2004, 10th International Conference, CP 2004, Toronto, Canada, September 27 - October 1, 2004, Proceedings*, volume 3258 of *Lecture Notes in Computer Science*, pages 305–316. Springer, 2004. doi:10.1007/978-3-540-30201-8_24.
- [113] John N. Hooker. A hybrid method for the planning and scheduling. *Constraints An Int. J.*, 10(4):385–401, 2005. URL: <https://doi.org/10.1007/s10601-005-2812-2>, doi:10.1007/S10601-005-2812-2.
- [114] John N. Hooker. Planning and scheduling to minimize tardiness. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 314–327. Springer, 2005. doi:10.1007/11564751_25.
- [115] John N. Hooker. An integrated method for planning and scheduling to minimize tardiness. *Constraints An Int. J.*, 11(2-3):139–157, 2006. URL: <https://doi.org/10.1007/s10601-006-8060-2>, doi:10.1007/S10601-006-8060-2.
- [116] John N. Hooker. Job sequencing bounds from decision diagrams. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 565–578. Springer, 2017. doi:10.1007/978-3-319-66158-2_36.
- [117] John N. Hooker and Hong Yan. A relaxation of the cumulative constraint. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 686–690. Springer, 2002. doi:10.1007/3-540-46135-3_46.
- [118] Vinasétan Ratheil Houndji, Pierre Schaus, Laurence A. Wolsey, and Yves Deville. The stockingcost constraint. In Barry O’Sullivan, editor, *Principles and Practice of Constraint Programming - 20th International Conference, CP 2014, Lyon, France, September 8-12, 2014. Proceedings*, volume 8656 of *Lecture Notes in Computer Science*, pages 382–397. Springer, 2014. doi:10.1007/978-3-319-10428-7_29.

- [119] Georgiana Ifrim, Barry O’Sullivan, and Helmut Simonis. Properties of energy-price forecasts for scheduling. In Michela Milano, editor, *Principles and Practice of Constraint Programming - 18th International Conference, CP 2012, Québec City, QC, Canada, October 8-12, 2012. Proceedings*, volume 7514 of *Lecture Notes in Computer Science*, pages 957–972. Springer, 2012. doi:10.1007/978-3-642-33558-7_68.
- [120] Carla Juvin, Emmanuel Hebrard, Laurent Houssin, and Pierre Lopez. An efficient constraint programming approach to preemptive job shop scheduling. In Roland H. C. Yap, editor, *29th International Conference on Principles and Practice of Constraint Programming, CP 2023, August 27-31, 2023, Toronto, Canada*, volume 280 of *LIPICs*, pages 19:1–19:16. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2023. URL: <https://doi.org/10.4230/LIPICs.CP.2023.19>, doi:10.4230/LIPICs.CP.2023.19.
- [121] Carla Juvin, Laurent Houssin, and Pierre Lopez. Constraint programming for the robust two-machine flow-shop scheduling problem with budgeted uncertainty. In André A. Ciré, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 20th International Conference, CPAIOR 2023, Nice, France, May 29 - June 1, 2023, Proceedings*, volume 13884 of *Lecture Notes in Computer Science*, pages 354–369. Springer, 2023. doi:10.1007/978-3-031-33271-5_23.
- [122] Olli Kamarainen and Hani El Sakkout. Local probing applied to scheduling. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 155–171. Springer, 2002. doi:10.1007/3-540-46135-3_11.
- [123] Roger Kameugne. Propagation techniques of resource constraint for cumulative scheduling. *Constraints An Int. J.*, 20(4):506–507, 2015. URL: <https://doi.org/10.1007/s10601-015-9227-5>, doi:10.1007/S10601-015-9227-5.
- [124] Roger Kameugne, Séverine Betmbe Fetgo, Vincent Gingras, Yanick Ouellet, and Claude-Guy Quimper. Horizontally elastic not-first/not-last filtering algorithm for cumulative resource constraint. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 316–332. Springer, 2018. doi:10.1007/978-3-319-93031-2_23.
- [125] Roger Kameugne, Séverine Betmbe Fetgo, Thierry Noulamo, and Clémentin Tayou Djamégni. Horizontally elastic edge finder rule for cumulative constraint based on slack and density. In Roland H. C. Yap, editor, *29th International Conference on Principles and Practice of Constraint Programming, CP 2023, August 27-31, 2023, Toronto, Canada*, volume 280 of *LIPICs*, pages 20:1–20:17. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2023. URL: <https://doi.org/10.4230/LIPICs.CP.2023.20>, doi:10.4230/LIPICs.CP.2023.20.
- [126] Roger Kameugne, Laure Pauline Fotso, Joseph D. Scott, and Youcheu Ngo-Kateu. A quadratic edge-finding filtering algorithm for cumulative resource constraints. In Jimmy Ho-Man Lee, editor, *Principles and Practice of Constraint Programming - CP 2011 - 17th International Conference, CP 2011, Perugia, Italy, September 12-16, 2011. Proceedings*, volume 6876 of *Lecture Notes in Computer Science*, pages 478–492. Springer, 2011. doi:10.1007/978-3-642-23786-7_37.
- [127] Roger Kameugne, Laure Pauline Fotso, Joseph D. Scott, and Youcheu Ngo-Kateu. A quadratic edge-finding filtering algorithm for cumulative resource constraints. *Constraints An Int. J.*, 19(3):243–269, 2014. URL: <https://doi.org/10.1007/s10601-013-9157-z>, doi:10.1007/S10601-013-9157-Z.
- [128] Elena Kelareva, Kevin Tierney, and Philip Kilby. CP methods for scheduling and routing with time-dependent task costs. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 111–127. Springer, 2013. doi:10.1007/978-3-642-38171-3_8.

- [129] András Kéri and Tamás Kis. Computing tight time windows for RCPSPWET with the primal-dual method. In Pascal Van Hentenryck and Laurence A. Wolsey, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 4th International Conference, CPAIOR 2007, Brussels, Belgium, May 23-26, 2007, Proceedings*, volume 4510 of *Lecture Notes in Computer Science*, pages 127–140. Springer, 2007. doi:10.1007/978-3-540-72397-4_10.
- [130] Mohand Ou Idir Khemmoudj, Marc Porcheron, and Hachemi Bennaceur. When constraint programming and local search solve the scheduling problem of electricité de france nuclear power plant outages. In Frédéric Benhamou, editor, *Principles and Practice of Constraint Programming - CP 2006, 12th International Conference, CP 2006, Nantes, France, September 25-29, 2006, Proceedings*, volume 4204 of *Lecture Notes in Computer Science*, pages 271–283. Springer, 2006. doi:10.1007/11889205_21.
- [131] Dongyun Kim, Yeonjun Choi, Kyungduk Moon, Myungho Lee, Kangbok Lee, and Michael L. Pinedo. Iterated greedy constraint programming for scheduling steel-making continuous casting. In André A. Ciré, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 20th International Conference, CPAIOR 2023, Nice, France, May 29 - June 1, 2023, Proceedings*, volume 13884 of *Lecture Notes in Computer Science*, pages 477–492. Springer, 2023. doi:10.1007/978-3-031-33271-5_31.
- [132] Christian Klanke, Dominik R. Bleidorn, Vassilios Yfantis, and Sebastian Engell. Combining constraint programming and temporal decomposition approaches - scheduling of an industrial formulation plant. In Peter J. Stuckey, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 18th International Conference, CPAIOR 2021, Vienna, Austria, July 5-8, 2021, Proceedings*, volume 12735 of *Lecture Notes in Computer Science*, pages 133–148. Springer, 2021. doi:10.1007/978-3-030-78230-6_9.
- [133] Lucas Kletzander and Nysret Musliu. A multi-stage simulated annealing algorithm for the torpedo scheduling problem. In Domenico Salvagnin and Michele Lombardi, editors, *Integration of AI and OR Techniques in Constraint Programming - 14th International Conference, CPAIOR 2017, Padua, Italy, June 5-8, 2017, Proceedings*, volume 10335 of *Lecture Notes in Computer Science*, pages 344–358. Springer, 2017. doi:10.1007/978-3-319-59776-8_28.
- [134] Jana Koehler, Josef Bürgler, Urs Fontana, Etienne Fux, Florian A. Herzog, Marc Pouly, Sophia Saller, Anastasia Salyaeva, Peter Scheiblechner, and Kai Waelti. Cable tree wiring - benchmarking solvers on a real-world scheduling problem with a variety of precedence constraints. *Constraints An Int. J.*, 26(1):56–106, 2021. URL: <https://doi.org/10.1007/s10601-021-09321-w>, doi:10.1007/S10601-021-09321-W.
- [135] Sebastian Kosch and J. Christopher Beck. A new MIP model for parallel-batch scheduling with non-identical job sizes. In Helmut Simonis, editor, *Integration of AI and OR Techniques in Constraint Programming - 11th International Conference, CPAIOR 2014, Cork, Ireland, May 19-23, 2014. Proceedings*, volume 8451 of *Lecture Notes in Computer Science*, pages 55–70. Springer, 2014. doi:10.1007/978-3-319-07046-9_5.
- [136] András Kovács and J. Christopher Beck. A global constraint for total weighted completion time for unary resources. *Constraints An Int. J.*, 16(1):100–123, 2011. URL: <https://doi.org/10.1007/s10601-009-9088-x>, doi:10.1007/S10601-009-9088-X.
- [137] András Kovács, Péter Egri, Tamás Kis, and József Váncza. Proterv-ii: An integrated production planning and scheduling system. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, pages 880–880. Springer, 2005. doi:10.1007/11564751_118.
- [138] András Kovács and Tamás Kis. Constraint programming approach to a bilevel scheduling problem. *Constraints An Int. J.*, 16(3):317–340, 2011. URL: <https://doi.org/10.1007/s10601-010-9102-3>, doi:10.1007/S10601-010-9102-3.
- [139] András Kovács and József Váncza. Completable partial solutions in constraint programming and constraint-based scheduling. In Mark Wallace, editor, *Principles and Practice of Constraint Programming - CP 2004, 10th International Conference, CP 2004, Toronto, Canada, September 27 - October 1, 2004, Proceedings*, volume 3258 of *Lecture Notes in Computer Science*, pages 332–346. Springer, 2004. doi:10.1007/978-3-540-30201-8_26.

- [140] András Kovács and József Váncza. Progressive solutions: A simple but efficient dominance rule for practical RCPSP. In J. Christopher Beck and Barbara M. Smith, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Third International Conference, CPAIOR 2006, Cork, Ireland, May 31 - June 2, 2006, Proceedings*, volume 3990 of *Lecture Notes in Computer Science*, pages 139–151. Springer, 2006. doi:10.1007/11757375_13.
- [141] Benjamin Kovács, Pierre Tassel, Wolfgang Kohlenbrein, Philipp Schrott-Kostwein, and Martin Gebser. Utilizing constraint optimization for industrial machine workload balancing. In Laurent D. Michel, editor, *27th International Conference on Principles and Practice of Constraint Programming, CP 2021, Montpellier, France (Virtual Conference), October 25-29, 2021*, volume 210 of *LIPIcs*, pages 36:1–36:17. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2021. URL: <https://doi.org/10.4230/LIPIcs.CP.2021.36>, doi:10.4230/LIPIcs.CP.2021.36.
- [142] Stefan Kreter, Andreas Schutt, and Peter J. Stuckey. Modeling and solving project scheduling with calendars. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 262–278. Springer, 2015. doi:10.1007/978-3-319-23219-5_19.
- [143] Stefan Kreter, Andreas Schutt, and Peter J. Stuckey. Using constraint programming for solving rcpsp/max-cal. *Constraints An Int. J.*, 22(3):432–462, 2017. URL: <https://doi.org/10.1007/s10601-016-9266-6>, doi:10.1007/S10601-016-9266-6.
- [144] T. K. Satish Kumar. Incremental computation of resource-envelopes in producer-consumer models. In Francesca Rossi, editor, *Principles and Practice of Constraint Programming - CP 2003, 9th International Conference, CP 2003, Kinsale, Ireland, September 29 - October 3, 2003, Proceedings*, volume 2833 of *Lecture Notes in Computer Science*, pages 664–678. Springer, 2003. doi:10.1007/978-3-540-45193-8_45.
- [145] Philippe Laborie. IBM ILOG CP optimizer for detailed scheduling illustrated on three problems. In Willem Jan van Hoeve and John N. Hooker, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 6th International Conference, CPAIOR 2009, Pittsburgh, PA, USA, May 27-31, 2009, Proceedings*, volume 5547 of *Lecture Notes in Computer Science*, pages 148–162. Springer, 2009. doi:10.1007/978-3-642-01929-6_12.
- [146] Philippe Laborie. An update on the comparison of mip, CP and hybrid approaches for mixed resource allocation and scheduling. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 403–411. Springer, 2018. doi:10.1007/978-3-319-93031-2_29.
- [147] Philippe Laborie, Jerome Rogerie, Paul Shaw, and Petr Vilím. IBM ILOG CP optimizer for scheduling - 20+ years of scheduling with constraints at IBM/ILOG. *Constraints An Int. J.*, 23(2):210–250, 2018. URL: <https://doi.org/10.1007/s10601-018-9281-x>, doi:10.1007/S10601-018-9281-X.
- [148] Marie-Louise Lackner, Christoph Mrkvicka, Nysret Musliu, Daniel Walkiewicz, and Felix Winter. Minimizing cumulative batch processing time for an industrial oven scheduling problem. In Laurent D. Michel, editor, *27th International Conference on Principles and Practice of Constraint Programming, CP 2021, Montpellier, France (Virtual Conference), October 25-29, 2021*, volume 210 of *LIPIcs*, pages 37:1–37:18. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2021. URL: <https://doi.org/10.4230/LIPIcs.CP.2021.37>, doi:10.4230/LIPIcs.CP.2021.37.
- [149] Marie-Louise Lackner, Christoph Mrkvicka, Nysret Musliu, Daniel Walkiewicz, and Felix Winter. Exact methods for the oven scheduling problem. *Constraints An Int. J.*, 28(2):320–361, 2023. URL: <https://doi.org/10.1007/s10601-023-09347-2>, doi:10.1007/S10601-023-09347-2.
- [150] Asma Lahimer, Pierre Lopez, and Mohamed Haouari. Climbing depth-bounded adjacent discrepancy search for solving hybrid flow shop scheduling problems with multiprocessor tasks. In Tobias Achterberg and J. Christopher Beck, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23-27, 2011. Proceedings*, volume 6697 of *Lecture Notes in Computer Science*, pages 117–130. Springer, 2011. doi:10.1007/978-3-642-21311-3_12.

- [151] Hoong Chuin Lau, Kong Wei Lye, and Viet Bang Nguyen. A combinatorial auction framework for solving decentralized scheduling problems (extended abstract). In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 333–337. Springer, 2008. doi:10.1007/978-3-540-68155-7_33.
- [152] Arnaud Letort, Nicolas Beldiceanu, and Mats Carlsson. A scalable sweep algorithm for the cumulative constraint. In Michela Milano, editor, *Principles and Practice of Constraint Programming - 18th International Conference, CP 2012, Québec City, QC, Canada, October 8-12, 2012. Proceedings*, volume 7514 of *Lecture Notes in Computer Science*, pages 439–454. Springer, 2012. doi:10.1007/978-3-642-33558-7_33.
- [153] Arnaud Letort, Mats Carlsson, and Nicolas Beldiceanu. A synchronized sweep algorithm for the k -dimensional cumulative constraint. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 144–159. Springer, 2013. doi:10.1007/978-3-642-38171-3_10.
- [154] Arnaud Letort, Mats Carlsson, and Nicolas Beldiceanu. Synchronized sweep algorithms for scalable scheduling constraints. *Constraints An Int. J.*, 20(2):183–234, 2015. URL: <https://doi.org/10.1007/s10601-014-9172-8>, doi:10.1007/S10601-014-9172-8.
- [155] Andrew Lim, Brian Rodrigues, and Zhou Xu. Solving the crane scheduling problem using intelligent search schemes. In Mark Wallace, editor, *Principles and Practice of Constraint Programming - CP 2004, 10th International Conference, CP 2004, Toronto, Canada, September 27 - October 1, 2004, Proceedings*, volume 3258 of *Lecture Notes in Computer Science*, pages 747–751. Springer, 2004. doi:10.1007/978-3-540-30201-8_59.
- [156] BoonPing Lim, Hassan L. Hijazi, Sylvie Thiébaux, and Menkes van den Briel. Online hvac-aware occupancy scheduling with adaptive temperature control. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 683–700. Springer, 2016. doi:10.1007/978-3-319-44953-1_43.
- [157] BoonPing Lim, Menkes van den Briel, Sylvie Thiébaux, Russell Bent, and Scott Backhaus. Large neighborhood search for energy aware meeting scheduling in smart buildings. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 240–254. Springer, 2015. doi:10.1007/978-3-319-18008-3_17.
- [158] Kamol Limtanyakul and Uwe Schwiegelshohn. Improvements of constraint programming and hybrid methods for scheduling of tests on vehicle prototypes. *Constraints An Int. J.*, 17(2):172–203, 2012. URL: <https://doi.org/10.1007/s10601-012-9118-y>, doi:10.1007/S10601-012-9118-Y.
- [159] Tong Liu, Roberto Di Cosmo, Maurizio Gabbrielli, and Jacopo Mauro. Nightsplitter: A scheduling tool to optimize (sub)group activities. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 370–386. Springer, 2017. doi:10.1007/978-3-319-66158-2_24.
- [160] Michele Lombardi, Alessio Bonfietti, and Michela Milano. Deterministic estimation of the expected makespan of a POS under duration uncertainty. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 279–294. Springer, 2015. doi:10.1007/978-3-319-23219-5_20.
- [161] Michele Lombardi, Alessio Bonfietti, Michela Milano, and Luca Benini. Precedence constraint posting for cyclic scheduling problems. In Tobias Achterberg and J. Christopher Beck, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23-27, 2011. Proceedings*, volume 6697 of *Lecture Notes in Computer Science*, pages 137–153. Springer, 2011. doi:10.1007/978-3-642-21311-3_14.

- [162] Michele Lombardi and Michela Milano. A precedence constraint posting approach for the RCPSP with time lags and variable durations. In Ian P. Gent, editor, *Principles and Practice of Constraint Programming - CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20-24, 2009, Proceedings*, volume 5732 of *Lecture Notes in Computer Science*, pages 569–583. Springer, 2009. doi:10.1007/978-3-642-04244-7_45.
- [163] Michele Lombardi and Michela Milano. Constraint based scheduling to deal with uncertain durations and self-timed execution. In David Cohen, editor, *Principles and Practice of Constraint Programming - CP 2010 - 16th International Conference, CP 2010, St. Andrews, Scotland, UK, September 6-10, 2010. Proceedings*, volume 6308 of *Lecture Notes in Computer Science*, pages 383–397. Springer, 2010. doi:10.1007/978-3-642-15396-9_32.
- [164] Michele Lombardi and Michela Milano. Optimal methods for resource allocation and scheduling: a cross-disciplinary survey. *Constraints An Int. J.*, 17(1):51–85, 2012. URL: <https://doi.org/10.1007/s10601-011-9115-6>, doi:10.1007/S10601-011-9115-6.
- [165] Tony Minoru Tamura Lopes, André A. Ciré, Cid Carvalho de Souza, and Arnaldo Vieira Moura. A hybrid model for a multiproduct pipeline planning and scheduling problem. *Constraints An Int. J.*, 15(2):151–189, 2010. URL: <https://doi.org/10.1007/s10601-009-9086-z>, doi:10.1007/S10601-009-9086-Z.
- [166] Gilles Madi-Wamba and Nicolas Beldiceanu. The taskintersection constraint. In Claude-Guy Quimper, editor, *Integration of AI and OR Techniques in Constraint Programming - 13th International Conference, CPAIOR 2016, Banff, AB, Canada, May 29 - June 1, 2016, Proceedings*, volume 9676 of *Lecture Notes in Computer Science*, pages 246–261. Springer, 2016. doi:10.1007/978-3-319-33954-2_18.
- [167] Arnaud Malapert and Margaux Nattaf. A new cp-approach for a parallel machine scheduling problem with time constraints on machine qualifications. In Louis-Martin Rousseau and Kostas Stergiou, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 16th International Conference, CPAIOR 2019, Thessaloniki, Greece, June 4-7, 2019, Proceedings*, volume 11494 of *Lecture Notes in Computer Science*, pages 426–442. Springer, 2019. doi:10.1007/978-3-030-19212-9_28.
- [168] Christos T. Maravelias and Ignacio E. Grossmann. Using MILP and CP for the scheduling of batch chemical processes. In Jean-Charles Régin and Michel Rueher, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, First International Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings*, volume 3011 of *Lecture Notes in Computer Science*, pages 1–20. Springer, 2004. doi:10.1007/978-3-540-24664-0_1.
- [169] Alexandre Mercier-Aubin, Jonathan Gaudreault, and Claude-Guy Quimper. Leveraging constraint scheduling: A case study to the textile industry. In Emmanuel Hebrard and Nysret Musliu, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 17th International Conference, CPAIOR 2020, Vienna, Austria, September 21-24, 2020, Proceedings*, volume 12296 of *Lecture Notes in Computer Science*, pages 334–346. Springer, 2020. doi:10.1007/978-3-030-58942-4_22.
- [170] Jean-Noël Monette, Yves Deville, and Pierre Dupont. A position-based propagator for the open-shop problem. In Pascal Van Hentenryck and Laurence A. Wolsey, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 4th International Conference, CPAIOR 2007, Brussels, Belgium, May 23-26, 2007, Proceedings*, volume 4510 of *Lecture Notes in Computer Science*, pages 186–199. Springer, 2007. doi:10.1007/978-3-540-72397-4_14.
- [171] Morten Mossige, Arnaud Gotlieb, Helge Spieker, Hein Meling, and Mats Carlsson. Time-aware test case execution scheduling for cyber-physical systems. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 387–404. Springer, 2017. doi:10.1007/978-3-319-66158-2_25.
- [172] Arnaldo Vieira Moura, Cid C. de Souza, André A. Ciré, and Tony Minoru Tamura Lopes. Planning and scheduling the operation of a very large oil pipeline network. In Peter J. Stuckey, editor, *Principles and Practice of Constraint Programming, 14th International Conference, CP 2008, Sydney, Australia, September 14-18, 2008. Proceedings*, volume 5202 of *Lecture Notes in Computer Science*, pages 36–51. Springer, 2008. doi:10.1007/978-3-540-85958-1_3.

- [173] Stanislav Murín and Hana Rudová. Scheduling of mobile robots using constraint programming. In Thomas Schiex and Simon de Givry, editors, *Principles and Practice of Constraint Programming - 25th International Conference, CP 2019, Stamford, CT, USA, September 30 - October 4, 2019, Proceedings*, volume 11802 of *Lecture Notes in Computer Science*, pages 456–471. Springer, 2019. doi:10.1007/978-3-030-30048-7_27.
- [174] Seán Óg Murphy, Oscar Manzano, and Kenneth N. Brown. Design and evaluation of a constraint-based energy saving and scheduling recommender system. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 687–703. Springer, 2015. doi:10.1007/978-3-319-23219-5_47.
- [175] Nicola Muscettola. Computing the envelope for stepwise-constant resource allocations. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, pages 139–154. Springer, 2002. doi:10.1007/3-540-46135-3_10.
- [176] Margaux Nattaf, Christian Artigues, and Pierre Lopez. A hybrid exact method for a scheduling problem with a continuous resource and energy constraints. *Constraints An Int. J.*, 20(3):304–324, 2015. URL: <https://doi.org/10.1007/s10601-015-9192-z>, doi:10.1007/S10601-015-9192-Z.
- [177] Margaux Nattaf, Christian Artigues, and Pierre Lopez. Cumulative scheduling with variable task profiles and concave piecewise linear processing rate functions. *Constraints An Int. J.*, 22(4):530–547, 2017. URL: <https://doi.org/10.1007/s10601-017-9271-4>, doi:10.1007/S10601-017-9271-4.
- [178] Margaux Nattaf and Arnaud Malapert. Filtering rules for flow time minimization in a parallel machine scheduling problem. In Helmut Simonis, editor, *Principles and Practice of Constraint Programming - 26th International Conference, CP 2020, Louvain-la-Neuve, Belgium, September 7-11, 2020, Proceedings*, volume 12333 of *Lecture Notes in Computer Science*, pages 462–477. Springer, 2020. doi:10.1007/978-3-030-58475-7_27.
- [179] Angelo Oddi, Nicola Policella, Amedeo Cesta, and Gabriella Cortellessa. Generating high quality schedules for a spacecraft memory downlink problem. In Francesca Rossi, editor, *Principles and Practice of Constraint Programming - CP 2003, 9th International Conference, CP 2003, Kinsale, Ireland, September 29 - October 3, 2003, Proceedings*, volume 2833 of *Lecture Notes in Computer Science*, pages 570–584. Springer, 2003. doi:10.1007/978-3-540-45193-8_39.
- [180] Pierre Ouellet and Claude-Guy Quimper. Time-table extended-edge-finding for the cumulative constraint. In Christian Schulte, editor, *Principles and Practice of Constraint Programming - 19th International Conference, CP 2013, Uppsala, Sweden, September 16-20, 2013. Proceedings*, volume 8124 of *Lecture Notes in Computer Science*, pages 562–577. Springer, 2013. doi:10.1007/978-3-642-40627-0_42.
- [181] Yanick Ouellet and Claude-Guy Quimper. A $o(n \log^2 n)$ checker and $o(n^2 \log n)$ filtering algorithm for the energetic reasoning. In Willem Jan van Hoeve, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 15th International Conference, CPAIOR 2018, Delft, The Netherlands, June 26-29, 2018, Proceedings*, volume 10848 of *Lecture Notes in Computer Science*, pages 477–494. Springer, 2018. doi:10.1007/978-3-319-93031-2_34.
- [182] Yanick Ouellet and Claude-Guy Quimper. A mincumulative resource constraint. In Pierre Schaus, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 19th International Conference, CPAIOR 2022, Los Angeles, CA, USA, June 20-23, 2022, Proceedings*, volume 13292 of *Lecture Notes in Computer Science*, pages 318–334. Springer, 2022. doi:10.1007/978-3-031-08011-1_21.
- [183] Cemalettin Öztürk, Semra Tunali, Brahim Hnich, and M. Arslan Ornek. Balancing and scheduling of flexible mixed model assembly lines. *Constraints An Int. J.*, 18(3):434–469, 2013. URL: <https://doi.org/10.1007/s10601-013-9142-6>, doi:10.1007/S10601-013-9142-6.
- [184] Claude Le Pape and Philippe Baptiste. Resource constraints for preemptive job-shop scheduling. *Constraints An Int. J.*, 3(4):263–287, 1998. doi:10.1023/A:1009723704757.

- [185] Gilles Pesant, Gregory Rix, and Louis-Martin Rousseau. A comparative study of MIP and CP formulations for the B2B scheduling optimization problem. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 306–321. Springer, 2015. doi:10.1007/978-3-319-18008-3_21.
- [186] Louis Popovic, Alain Côté, Mohamed Gaha, Franklin Nguewouo, and Quentin Cappart. Scheduling the equipment maintenance of an electric power transmission network using constraint programming. In Christine Solnon, editor, *28th International Conference on Principles and Practice of Constraint Programming, CP 2022, July 31 to August 8, 2022, Haifa, Israel*, volume 235 of *LIPIcs*, pages 34:1–34:15. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022. URL: <https://doi.org/10.4230/LIPIcs.CP.2022.34>, doi:10.4230/LIPIcs.CP.2022.34.
- [187] Guillaume Povéda, Nahum Álvarez, and Christian Artigues. Partially preemptive multi skill/mode resource-constrained project scheduling with generalized precedence relations and calendars. In Roland H. C. Yap, editor, *29th International Conference on Principles and Practice of Constraint Programming, CP 2023, August 27-31, 2023, Toronto, Canada*, volume 280 of *LIPIcs*, pages 31:1–31:21. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2023. URL: <https://doi.org/10.4230/LIPIcs.CP.2023.31>, doi:10.4230/LIPIcs.CP.2023.31.
- [188] Cédric Pralet. An incomplete constraint-based system for scheduling with renewable resources. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 243–261. Springer, 2017. doi:10.1007/978-3-319-66158-2_16.
- [189] Cédric Pralet, Solange Lemaï-Chenevier, and Jean Jaubert. Scheduling running modes of satellite instruments using constraint-based local search. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 704–719. Springer, 2015. doi:10.1007/978-3-319-23219-5_48.
- [190] Jean-Francois Puget. Applications of constraint programming. In Ugo Montanari and Francesca Rossi, editors, *Principles and Practice of Constraint Programming - CP'95, First International Conference, CP'95, Cassis, France, September 19-22, 1995, Proceedings*, volume 976 of *Lecture Notes in Computer Science*, pages 647–650. Springer, 1995. doi:10.1007/3-540-60299-2_43.
- [191] Andrea Rendl, Matthias Prandtstetter, Gerhard Hiermann, Jakob Puchinger, and Günther R. Raidl. Hybrid heuristics for multimodal homecare scheduling. In Nicolas Beldiceanu, Narendra Jussien, and Eric Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 9th International Conference, CPAIOR 2012, Nantes, France, May 28 - June 1, 2012, Proceedings*, volume 7298 of *Lecture Notes in Computer Science*, pages 339–355. Springer, 2012. doi:10.1007/978-3-642-29828-8_22.
- [192] Robert Rodosek and Mark Wallace. A generic model and hybrid algorithm for hoist scheduling problems. In Michael J. Maher and Jean-Francois Puget, editors, *Principles and Practice of Constraint Programming - CP98, 4th International Conference, Pisa, Italy, October 26-30, 1998, Proceedings*, volume 1520 of *Lecture Notes in Computer Science*, pages 385–399. Springer, 1998. doi:10.1007/3-540-49481-2_28.
- [193] Roberto Rossi, Armagan Tarim, Brahim Hnich, and Steven D. Prestwich. Replenishment planning for stochastic inventory systems with shortage cost. In Pascal Van Hentenryck and Laurence A. Wolsey, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 4th International Conference, CPAIOR 2007, Brussels, Belgium, May 23-26, 2007, Proceedings*, volume 4510 of *Lecture Notes in Computer Science*, pages 229–243. Springer, 2007. doi:10.1007/978-3-540-72397-4_17.
- [194] Ruslan Sadykov. A hybrid branch-and-cut algorithm for the one-machine scheduling problem. In Jean-Charles Régin and Michel Rueher, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, First International Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings*, volume 3011 of *Lecture Notes in Computer Science*, pages 409–415. Springer, 2004. doi:10.1007/978-3-540-24664-0_31.

- [195] Hani El Sakkout and Mark Wallace. Probe backtrack search for minimal perturbation in dynamic scheduling. *Constraints An Int. J.*, 5(4):359–388, 2000. doi:10.1023/A:1009856210543.
- [196] Pierre Schaus, Pascal Van Hentenryck, Jean-Noël Monette, Carleton Coffrin, Laurent Michel, and Yves Deville. Solving steel mill slab problems with constraint-based techniques: Cp, Ins, and CBLs. *Constraints An Int. J.*, 16(2):125–147, 2011. URL: <https://doi.org/10.1007/s10601-010-9100-5>, doi:10.1007/S10601-010-9100-5.
- [197] Klaus Schild and Jörg Würtz. Scheduling of time-triggered real-time systems. *Constraints An Int. J.*, 5(4):335–357, 2000. doi:10.1023/A:1009804226473.
- [198] Andreas Schutt, Geoffrey Chu, Peter J. Stuckey, and Mark G. Wallace. Maximising the net present value for resource-constrained project scheduling. In Nicolas Beldiceanu, Narendra Jussien, and Eric Pinson, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 9th International Conference, CPAIOR 2012, Nantes, France, May 28 - June 1, 2012. Proceedings*, volume 7298 of *Lecture Notes in Computer Science*, pages 362–378. Springer, 2012. doi:10.1007/978-3-642-29828-8_24.
- [199] Andreas Schutt, Thibaut Feydy, and Peter J. Stuckey. Explaining time-table-edge-finding propagation for the cumulative resource constraint. In Carla P. Gomes and Meinolf Sellmann, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 10th International Conference, CPAIOR 2013, Yorktown Heights, NY, USA, May 18-22, 2013. Proceedings*, volume 7874 of *Lecture Notes in Computer Science*, pages 234–250. Springer, 2013. doi:10.1007/978-3-642-38171-3_16.
- [200] Andreas Schutt, Thibaut Feydy, and Peter J. Stuckey. Scheduling optional tasks with explanation. In Christian Schulte, editor, *Principles and Practice of Constraint Programming - 19th International Conference, CP 2013, Uppsala, Sweden, September 16-20, 2013. Proceedings*, volume 8124 of *Lecture Notes in Computer Science*, pages 628–644. Springer, 2013. doi:10.1007/978-3-642-40627-0_47.
- [201] Andreas Schutt, Thibaut Feydy, Peter J. Stuckey, and Mark Wallace. Why cumulative decomposition is not as bad as it sounds. In Ian P. Gent, editor, *Principles and Practice of Constraint Programming - CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20-24, 2009. Proceedings*, volume 5732 of *Lecture Notes in Computer Science*, pages 746–761. Springer, 2009. doi:10.1007/978-3-642-04244-7_58.
- [202] Andreas Schutt, Thibaut Feydy, Peter J. Stuckey, and Mark G. Wallace. Explaining the cumulative propagator. *Constraints An Int. J.*, 16(3):250–282, 2011. URL: <https://doi.org/10.1007/s10601-010-9103-2>, doi:10.1007/S10601-010-9103-2.
- [203] Andreas Schutt and Peter J. Stuckey. Explaining producer/consumer constraints. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016. Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 438–454. Springer, 2016. doi:10.1007/978-3-319-44953-1_28.
- [204] Andreas Schutt and Armin Wolf. A new $O(n^2 \log n)$ not-first/not-last pruning algorithm for cumulative resource constraints. In David Cohen, editor, *Principles and Practice of Constraint Programming - CP 2010 - 16th International Conference, CP 2010, St. Andrews, Scotland, UK, September 6-10, 2010. Proceedings*, volume 6308 of *Lecture Notes in Computer Science*, pages 445–459. Springer, 2010. doi:10.1007/978-3-642-15396-9_36.
- [205] Thiago Serra, Gilberto Nishioka, and Fernando J. M. Marcellino. The offshore resources scheduling problem: Detailing a constraint programming approach. In Michela Milano, editor, *Principles and Practice of Constraint Programming - 18th International Conference, CP 2012, Québec City, QC, Canada, October 8-12, 2012. Proceedings*, volume 7514 of *Lecture Notes in Computer Science*, pages 823–839. Springer, 2012. doi:10.1007/978-3-642-33558-7_59.
- [206] Mohamed Siala. Search, propagation, and learning in sequencing and scheduling problems. *Constraints An Int. J.*, 20(4):479–480, 2015. URL: <https://doi.org/10.1007/s10601-015-9213-y>, doi:10.1007/S10601-015-9213-Y.

- [207] Mohamed Siala, Christian Artigues, and Emmanuel Hebrard. Two clause learning approaches for disjunctive scheduling. In Gilles Pesant, editor, *Principles and Practice of Constraint Programming - 21st International Conference, CP 2015, Cork, Ireland, August 31 - September 4, 2015, Proceedings*, volume 9255 of *Lecture Notes in Computer Science*, pages 393–402. Springer, 2015. doi:10.1007/978-3-319-23219-5_28.
- [208] Gilles Simonin, Christian Artigues, Emmanuel Hebrard, and Pierre Lopez. Scheduling scientific experiments on the rosetta/philae mission. In Michela Milano, editor, *Principles and Practice of Constraint Programming - 18th International Conference, CP 2012, Québec City, QC, Canada, October 8-12, 2012. Proceedings*, volume 7514 of *Lecture Notes in Computer Science*, pages 23–37. Springer, 2012. doi:10.1007/978-3-642-33558-7_5.
- [209] Gilles Simonin, Christian Artigues, Emmanuel Hebrard, and Pierre Lopez. Scheduling scientific experiments for comet exploration. *Constraints An Int. J.*, 20(1):77–99, 2015. URL: <https://doi.org/10.1007/s10601-014-9169-3>, doi:10.1007/S10601-014-9169-3.
- [210] Helmut Simonis. The CHIP system and its applications. In Ugo Montanari and Francesca Rossi, editors, *Principles and Practice of Constraint Programming - CP'95, First International Conference, CP'95, Cassis, France, September 19-22, 1995, Proceedings*, volume 976 of *Lecture Notes in Computer Science*, pages 643–646. Springer, 1995. doi:10.1007/3-540-60299-2_42.
- [211] Helmut Simonis. Models for global constraint applications. *Constraints An Int. J.*, 12(1):63–92, 2007. URL: <https://doi.org/10.1007/s10601-006-9011-7>, doi:10.1007/S10601-006-9011-7.
- [212] Helmut Simonis and Trijntje Cornelissens. Modelling producer/consumer constraints. In Ugo Montanari and Francesca Rossi, editors, *Principles and Practice of Constraint Programming - CP'95, First International Conference, CP'95, Cassis, France, September 19-22, 1995, Proceedings*, volume 976 of *Lecture Notes in Computer Science*, pages 449–462. Springer, 1995. doi:10.1007/3-540-60299-2_27.
- [213] Samuel Squillaci, Cédric Pralet, and Stéphanie Roussel. Scheduling complex observation requests for a constellation of satellites: Large neighborhood search approaches. In André A. Ciré, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 20th International Conference, CPAIOR 2023, Nice, France, May 29 - June 1, 2023, Proceedings*, volume 13884 of *Lecture Notes in Computer Science*, pages 443–459. Springer, 2023. doi:10.1007/978-3-031-33271-5_29.
- [214] Ria Szeredi and Andreas Schutt. Modelling and solving multi-mode resource-constrained project scheduling. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 483–492. Springer, 2016. doi:10.1007/978-3-319-44953-1_31.
- [215] Tanya Y. Tang and J. Christopher Beck. CP and hybrid models for two-stage batching and scheduling. In Emmanuel Hebrard and Nysret Musliu, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 17th International Conference, CPAIOR 2020, Vienna, Austria, September 21-24, 2020, Proceedings*, volume 12296 of *Lecture Notes in Computer Science*, pages 431–446. Springer, 2020. doi:10.1007/978-3-030-58942-4_28.
- [216] Fabio Tardivo, Agostino Dovier, Andrea Formisano, Laurent Michel, and Enrico Pontelli. Constraint propagation on GPU: A case study for the cumulative constraint. In André A. Ciré, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 20th International Conference, CPAIOR 2023, Nice, France, May 29 - June 1, 2023, Proceedings*, volume 13884 of *Lecture Notes in Computer Science*, pages 336–353. Springer, 2023. doi:10.1007/978-3-031-33271-5_22.
- [217] Alexander Tesch. A nearly exact propagation algorithm for energetic reasoning in $\mathcal{O}(n^2 \log n)$. In Michel Rueher, editor, *Principles and Practice of Constraint Programming - 22nd International Conference, CP 2016, Toulouse, France, September 5-9, 2016, Proceedings*, volume 9892 of *Lecture Notes in Computer Science*, pages 493–519. Springer, 2016. doi:10.1007/978-3-319-44953-1_32.

- [218] Alexander Tesch. Improving energetic propagations for cumulative scheduling. In John N. Hooker, editor, *Principles and Practice of Constraint Programming - 24th International Conference, CP 2018, Lille, France, August 27-31, 2018, Proceedings*, volume 11008 of *Lecture Notes in Computer Science*, pages 629–645. Springer, 2018. doi:10.1007/978-3-319-98334-9_41.
- [219] Touraïvane. Constraint programming and industrial applications. In Ugo Montanari and Francesca Rossi, editors, *Principles and Practice of Constraint Programming - CP'95, First International Conference, CP'95, Cassis, France, September 19-22, 1995, Proceedings*, volume 976 of *Lecture Notes in Computer Science*, pages 640–642. Springer, 1995. doi:10.1007/3-540-60299-2_41.
- [220] J. M. van den Akker, Guido Diepen, and J. A. Hoogeveen. A column generation based destructive lower bound for resource constrained project scheduling problems. In Pascal Van Hentenryck and Laurence A. Wolsey, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 4th International Conference, CPAIOR 2007, Brussels, Belgium, May 23-26, 2007, Proceedings*, volume 4510 of *Lecture Notes in Computer Science*, pages 376–390. Springer, 2007. doi:10.1007/978-3-540-72397-4_27.
- [221] Pim van den Bogaerdt and Mathijs de Weerdt. Lower bounds for uniform machine scheduling using decision diagrams. In Louis-Martin Rousseau and Kostas Stergiou, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 16th International Conference, CPAIOR 2019, Thessaloniki, Greece, June 4-7, 2019, Proceedings*, volume 11494 of *Lecture Notes in Computer Science*, pages 565–580. Springer, 2019. doi:10.1007/978-3-030-19212-9_38.
- [222] Roman van der Krogt, James Little, Kenneth Pulliam, Sue Hanhilammi, and Yue Jin. Scheduling for cellular manufacturing. In Christian Bessiere, editor, *Principles and Practice of Constraint Programming - CP 2007, 13th International Conference, CP 2007, Providence, RI, USA, September 23-27, 2007, Proceedings*, volume 4741 of *Lecture Notes in Computer Science*, pages 105–117. Springer, 2007. doi:10.1007/978-3-540-74970-7_10.
- [223] József Váncza and András Márkus. A constraint engine for manufacturing process planning. In Toby Walsh, editor, *Principles and Practice of Constraint Programming - CP 2001, 7th International Conference, CP 2001, Paphos, Cyprus, November 26 - December 1, 2001, Proceedings*, volume 2239 of *Lecture Notes in Computer Science*, pages 745–759. Springer, 2001. doi:10.1007/3-540-45578-7_60.
- [224] Gérard Verfaillie and Michel Lemaître. Selecting and scheduling observations for agile satellites: Some lessons from the constraint reasoning community point of view. In Toby Walsh, editor, *Principles and Practice of Constraint Programming - CP 2001, 7th International Conference, CP 2001, Paphos, Cyprus, November 26 - December 1, 2001, Proceedings*, volume 2239 of *Lecture Notes in Computer Science*, pages 670–684. Springer, 2001. doi:10.1007/3-540-45578-7_55.
- [225] Petr Vilím. Batch processing with sequence dependent setup times. In Pascal Van Hentenryck, editor, *Principles and Practice of Constraint Programming - CP 2002, 8th International Conference, CP 2002, Ithaca, NY, USA, September 9-13, 2002, Proceedings*, volume 2470 of *Lecture Notes in Computer Science*, page 764. Springer, 2002. doi:10.1007/3-540-46135-3_62.
- [226] Petr Vilím. Computing explanations for global scheduling constraints. In Francesca Rossi, editor, *Principles and Practice of Constraint Programming - CP 2003, 9th International Conference, CP 2003, Kinsale, Ireland, September 29 - October 3, 2003, Proceedings*, volume 2833 of *Lecture Notes in Computer Science*, page 1000. Springer, 2003. doi:10.1007/978-3-540-45193-8_124.
- [227] Petr Vilím. $O(n \log n)$ filtering algorithms for unary resource constraint. In Jean-Charles Régin and Michel Rueher, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, First International Conference, CPAIOR 2004, Nice, France, April 20-22, 2004, Proceedings*, volume 3011 of *Lecture Notes in Computer Science*, pages 335–347. Springer, 2004. doi:10.1007/978-3-540-24664-0_23.
- [228] Petr Vilím. Computing explanations for the unary resource constraint. In Roman Barták and Michela Milano, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, Second International Conference, CPAIOR 2005, Prague, Czech Republic, May 30 - June 1, 2005, Proceedings*, volume 3524 of *Lecture Notes in Computer Science*, pages 396–409. Springer, 2005. doi:10.1007/11493853_29.

- [229] Petr Vilím. Edge finding filtering algorithm for discrete cumulative resources in $O(kn \log n)$. In Ian P. Gent, editor, *Principles and Practice of Constraint Programming - CP 2009, 15th International Conference, CP 2009, Lisbon, Portugal, September 20-24, 2009, Proceedings*, volume 5732 of *Lecture Notes in Computer Science*, pages 802–816. Springer, 2009. doi:10.1007/978-3-642-04244-7_62.
- [230] Petr Vilím. Max energy filtering algorithm for discrete cumulative resources. In Willem Jan van Hoeve and John N. Hooker, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 6th International Conference, CPAIOR 2009, Pittsburgh, PA, USA, May 27-31, 2009, Proceedings*, volume 5547 of *Lecture Notes in Computer Science*, pages 294–308. Springer, 2009. doi:10.1007/978-3-642-01929-6_22.
- [231] Petr Vilím. Timetable edge finding filtering algorithm for discrete cumulative resources. In Tobias Achterberg and J. Christopher Beck, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems - 8th International Conference, CPAIOR 2011, Berlin, Germany, May 23-27, 2011. Proceedings*, volume 6697 of *Lecture Notes in Computer Science*, pages 230–245. Springer, 2011. doi:10.1007/978-3-642-21311-3_22.
- [232] Petr Vilím, Roman Barták, and Ondrej Cepek. Unary resource constraint with optional activities. In Mark Wallace, editor, *Principles and Practice of Constraint Programming - CP 2004, 10th International Conference, CP 2004, Toronto, Canada, September 27 - October 1, 2004, Proceedings*, volume 3258 of *Lecture Notes in Computer Science*, pages 62–76. Springer, 2004. doi:10.1007/978-3-540-30201-8_8.
- [233] Petr Vilím, Roman Barták, and Ondrej Cepek. Extension of $O(n \log n)$ filtering algorithms for the unary resource constraint to optional activities. *Constraints An Int. J.*, 10(4):403–425, 2005. URL: <https://doi.org/10.1007/s10601-005-2814-0>, doi:10.1007/S10601-005-2814-0.
- [234] Petr Vilím, Philippe Laborie, and Paul Shaw. Failure-directed search for constraint-based scheduling. In Laurent Michel, editor, *Integration of AI and OR Techniques in Constraint Programming - 12th International Conference, CPAIOR 2015, Barcelona, Spain, May 18-22, 2015, Proceedings*, volume 9075 of *Lecture Notes in Computer Science*, pages 437–453. Springer, 2015. doi:10.1007/978-3-319-18008-3_30.
- [235] Mark Wallace. Practical applications of constraint programming. *Constraints An Int. J.*, 1(1/2):139–168, 1996. doi:10.1007/BF00143881.
- [236] Mark Wallace and Neil Yorke-Smith. A new constraint programming model and solving for the cyclic hoist scheduling problem. *Constraints An Int. J.*, 25(3-4):319–337, 2020. URL: <https://doi.org/10.1007/s10601-020-09316-z>, doi:10.1007/S10601-020-09316-Z.
- [237] Jean-Paul Watson and J. Christopher Beck. A hybrid constraint programming / local search approach to the job-shop scheduling problem. In Laurent Perron and Michael A. Trick, editors, *Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems, 5th International Conference, CPAIOR 2008, Paris, France, May 20-23, 2008, Proceedings*, volume 5015 of *Lecture Notes in Computer Science*, pages 263–277. Springer, 2008. doi:10.1007/978-3-540-68155-7_21.
- [238] Johan Wessén, Mats Carlsson, and Christian Schulte. Scheduling of dual-arm multi-tool assembly robots and workspace layout optimization. In Emmanuel Hebrard and Nysret Musliu, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 17th International Conference, CPAIOR 2020, Vienna, Austria, September 21-24, 2020, Proceedings*, volume 12296 of *Lecture Notes in Computer Science*, pages 511–520. Springer, 2020. doi:10.1007/978-3-030-58942-4_33.
- [239] Felix Winter, Sebastian Meiswinkel, Nysret Musliu, and Daniel Walkiewicz. Modeling and solving parallel machine scheduling with contamination constraints in the agricultural industry. In Christine Solnon, editor, *28th International Conference on Principles and Practice of Constraint Programming, CP 2022, July 31 to August 8, 2022, Haifa, Israel*, volume 235 of *LIPICs*, pages 41:1–41:18. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022. URL: <https://doi.org/10.4230/LIPICs.CP.2022.41>, doi:10.4230/LIPICs.CP.2022.41.

- [240] Armin Wolf. Pruning while sweeping over task intervals. In Francesca Rossi, editor, *Principles and Practice of Constraint Programming - CP 2003, 9th International Conference, CP 2003, Kinsale, Ireland, September 29 - October 3, 2003, Proceedings*, volume 2833 of *Lecture Notes in Computer Science*, pages 739–753. Springer, 2003. doi:10.1007/978-3-540-45193-8_50.
- [241] Christine Wei Wu, Kenneth N. Brown, and J. Christopher Beck. Scheduling with uncertain start dates. In Peter van Beek, editor, *Principles and Practice of Constraint Programming - CP 2005, 11th International Conference, CP 2005, Sitges, Spain, October 1-5, 2005, Proceedings*, volume 3709 of *Lecture Notes in Computer Science*, page 872. Springer, 2005. doi:10.1007/11564751_110.
- [242] Moli Yang, Andreas Schutt, and Peter J. Stuckey. Time table edge finding with energy variables. In Louis-Martin Rousseau and Kostas Stergiou, editors, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 16th International Conference, CPAIOR 2019, Thessaloniki, Greece, June 4-7, 2019, Proceedings*, volume 11494 of *Lecture Notes in Computer Science*, pages 633–642. Springer, 2019. doi:10.1007/978-3-030-19212-9_42.
- [243] Kenneth D. Young, Thibaut Feydy, and Andreas Schutt. Constraint programming applied to the multi-skill project scheduling problem. In J. Christopher Beck, editor, *Principles and Practice of Constraint Programming - 23rd International Conference, CP 2017, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*, volume 10416 of *Lecture Notes in Computer Science*, pages 308–317. Springer, 2017. doi:10.1007/978-3-319-66158-2_20.
- [244] Jianyang Zhou. A constraint program for solving the job-shop problem. In Eugene C. Freuder, editor, *Proceedings of the Second International Conference on Principles and Practice of Constraint Programming, Cambridge, Massachusetts, USA, August 19-22, 1996*, volume 1118 of *Lecture Notes in Computer Science*, pages 510–524. Springer, 1996. doi:10.1007/3-540-61551-2_97.
- [245] Jianyang Zhou. A permutation-based approach for solving the job-shop problem. *Constraints An Int. J.*, 2(2):185–213, 1997. doi:10.1023/A:1009757726572.