

Personal Data

Norbert Trautmann
September 27, 1973, Karlsruhe, Germany
Chair in Quantitative Methods in Business Administration, University of Bern,
Schützenmattstrasse 14, CH-3012 Bern
Phone: +41 31 631 53 25
norbert.trautmann@pqm.unibe.ch

Research Interests

Combinatorial Optimization, Project Management and Project Scheduling, Production Planning and Control, Portfolio Optimization

Professional Experience

- 2011– *University of Fribourg*
Lecturer
Courses taught:
Logistics and Supply Chain Management (MSc), Decision Support II (BSc)
- 2009– *Rochester-Bern Executive Programs*
Lecturer (Master of Advanced Studies in General Management)
Courses taught:
Project Management and Project Planning
- 2008 *LMU München*
Lecturer (Master of Business Research)
Courses taught:
Quantitative Methods
- 2005– *University of Bern*
Full Professor in Quantitative Methods (2012–)
Professor in Quantitative Methods (2010–2011)
Assistant Professor in Quantitative Methods (2005–2010)
Courses taught:
Combinatorial Optimization (MSc), Project Management and Scheduling (MSc),
Quantitative Decision Support (BSc), Quantitative Methods in Business Administration I (BSc), Quantitative Methods in Business Administration II (BSc)

Honors and Fellowships

- 2010 Honourable mention award of the IEEE Conference on Industrial Engineering and Engineering Management
- 2001 Doctoral thesis award of the German Society of Operations Research
- 1996–1997 Scholarship of the European Union (Erasmus exchange program)

Job offers

- 2011 University of Mannheim: Full professorship for Service Operations Management, Faculty of Business Administration (declined)
- 2009 University of Ulm: Full professorship for Technology and Process Management - Quantitative Supply Chain Management, Faculty of Mathematics and Economics (declined)
- 2007 Aarhus School of Business, University of Aarhus: Professorship for Logistics and Supply Chain Management (declined)

Education

- 2004 Habilitation degree (*venia legendi*) for Operations Research, Production and Logistics, University of Karlsruhe
- 2000 Ph.D. (Economics), University of Karlsruhe
Thesis Title: „Short-term production planning in process industries“
Thesis Committee: Klaus Neumann (supervisor), Georg Bol, Wolfgang Gaul, Hans-Otto Günther
- 1997 M.S. (Business Engineering/Management Science), University of Karlsruhe

Academic Activities

- Research Projects:*
- 2012–2013 Scheduling of Assessment Centers, papilio AG
- 2009–2012 Short-term planning of make-and-pack production: SFr 152'609 Swiss National Science Foundation SNF; co-applicant: Marino Widmer (Université de Fribourg)
- 2006–2007 Internet-based teachware for data analysis: SFr 40'000, Virtual Campus / University of Bern
- 2005–2007 Plant occupancy planning in the process industries: €110'000, German Research Foundation DFG (project SCHW 11781), co-applicant: Christoph Schwindt (TU Clausthal)
- 1997–2002 Scheduling and resource allocation: €344'850, SAP AG, applicant: Klaus Neumann (University of Karlsruhe)

Ad Hoc Reviewer for Journals:

Annals of Operations Research, Chemical Engineering Communications, Computers & Industrial Engineering, Computers & Operations Research, European Journal of Operational Research, Flexible Services and Manufacturing Journal, International Journal of Operations Research, International Journal of Production Research, International Journal of Project Organization & Management, International Transactions in Operational Research, Journal of Decision Sciences, Journal of Heuristics, Journal of Scheduling, OR Spectrum

Ad Hoc Reviewer for Conferences:

IEEE International Conference on Computers & Industrial Engineering, IEEE International Conference on Industrial Engineering and Engineering Management, International Conference on Industrial Engineering and Production Management, EURO-workshop on Project Management and Scheduling, International Conference on Constraint Programming, Multidisciplinary International Conference on Scheduling: Theory and Applications

Programm Committee Member of:

EURO working group on Project Management and Scheduling, IEEE International Conference on Computers Industrial Engineering, IEEE International Conference on Industrial Engineering and Engineering Management, Multidisciplinary International Conference on Scheduling: Theory and Applications

Stream or Session Organizer at:

Conference Operations Research, European Conference on Operational Research, IEEE International Conference on Industrial Engineering and Engineering Management, Production and Operations Management Annual Conference, Supply Network and Logistics Management

Member of the Dissertation Committee:

Philipp Benke (TU Clausthal, 2007), Roman Schmid (University of Bern, 2009)

Dissertation supervisor:

Philipp Baumann (University of Bern, 2009–2013), Adrian Zimmermann (University of Bern, 2012–2016), Tom Rihm (University of Bern, 2013–2017), Oliver Strub (University of Bern, 2014–), Mario Gnägi (University of Bern, 2016–)

Conferences Organized:

2011 9th Joint OR days 2011 (in cooperation with IBM Switzerland)
2012–2016 CUSO PhD seminars in Zinal

Outside Teaching Activities

2011, 2014 *Universitat de València (Spain)*

Guest lectures: Aplicaciones de la programación lineal en mercadotecnia y finanzas, Portfolio selection with linear or nonlinear programming

Other Activities

2014– Member of the advisory board of the German Operations Research Society GOR

2012– Member of the board of the Swiss Operations Research Society (president of the society since 2017)

2011– Member of the foundation board and the financial committee of the Hans-Sigrist-Stiftung, Bern (president of the board since 2013)

2011– Member of the foundation board of the UniBern Forschungsstiftung (Berne University Research Foundation), Bern

- 2010– Kommission für Internationale Beziehungen, University of Bern
- 2010–2012 Head of the Department of Business Administration, University of Bern
- 2009–2016 Member of the board of the CUSO Doctoral program in Operations Research, PhD program with Ecole Polytechnique Fédérale de Lausanne, University of Fribourg, University of Geneva, University of Neuchâtel (president of the board 2011–2016)
- 2006– International student exchange coordinator of the Department of Business Administration, University of Bern

Professional Affiliations

German Academic Association for Business Research (VHB), Gesellschaft für Operations Research e.V., Institute for Operations Research and the Management Sciences (INFORMS), Swiss Operations Research Society, Volkswirtschaftliche Gesellschaft des Kantons Bern

Publications and Presentations

Peer-reviewed journal articles

- [22] O. Strub et al. A three-phase approach to an enhanced index-tracking problem with real-life constraints. *The Engineering Economist* 64(3), 227–253 (2019). [→available online](#).
- [21] M. Gnägi, T. Rihm, A. Zimmermann, and N. Trautmann. Two Continuous-Time Assignment-Based Models for the Multi-Mode Resource-Constrained Project Scheduling Problem. *Computers & Industrial Engineering* 129, 346–353 (2019). [→available online](#).
- [20] O. Strub and N. Trautmann. A two-stage approach to the UCITS-constrained index-tracking problem. *Computers and Operations Research* 103, 167–183 (2019). [→available online](#).
- [19] T. Rihm and N. Trautmann. A decomposition heuristic for short-term planning of assessment centres. *European Journal of Industrial Engineering* 11 (6), 725–751 (2017). [→available online](#).
- [18] A. Zimmermann and N. Trautmann. A list-scheduling heuristic for the short-term planning of assessment centers. *Journal of Scheduling* 21, 131–142 (2018). [→available online](#).
- [17] T. Rihm, N. Trautmann, and A. Zimmermann. MIP formulations for an application of project scheduling in human resource management. *Flexible Services and Manufacturing Journal* 30 (4), 609–639 (2018). [→available online](#).
- [16] P. Baumann and N. Trautmann. A note on the selection of priority rules in software packages for project management. *Flexible Services and Manufacturing Journal* 28, 694–702 (2016). [→available online](#).
- [15] P. Baumann, S. Forrer, and N. Trautmann. Planning of a make-to-order production process in the printing industry. *Flexible Services and Manufacturing Journal* 27, 534–560 (2015). [→available online](#).
- [14] G. Brandinu and N. Trautmann. An MILP approach to the optimization of event-bus schedules: a scheduling application in the tourism sector. *Journal of Scheduling* 17, 621–629 (2015). [→available online](#).
- [13] P. Baumann and N. Trautmann. A hybrid method for large-scale short-term scheduling of make-and-pack production processes. *European Journal of Operational Research* 236, 718–735 (2014). [→available online](#).
- [12] P. Baumann and N. Trautmann. Portfolio-optimization models for small investors. *Mathematical Methods of Operations Research* 77, 345–356 (2013). [→available online](#).
- [11] P. Baumann and N. Trautmann. A continuous-time MILP model for short-term scheduling of make-and-pack production processes. *International Journal of Production Research* 51, 1707–1727 (2013). [→available online](#).
- [10] C. U. Fündeling and N. Trautmann. A priority-rule method for project scheduling with work-content constraints. *European Journal of Operational Research* 203, 568–574 (2010). [→available online](#).
- [9] N. Trautmann and C. Schwindt. A cyclic approach to large-scale short-term planning in chemical batch production. *Journal of Scheduling* 12, 595–606 (2009). [→available online](#).
- [8] F. Ballestin and N. Trautmann. An iterated-local-search heuristic for the resource-constrained weighted earliness-tardiness project scheduling problem. *International Journal of Production Research* 46, 6231–6249 (2008). [→available online](#).
- [7] K. Neumann, C. Schwindt, and N. Trautmann. Scheduling of continuous and discontinuous material flows with intermediate storage restrictions. *European Journal of Operational Research* 165, 495–509 (2005). [→available online](#).
- [6] C. Mellentien, C. Schwindt, and N. Trautmann. Scheduling the factory pick-up of new cars. *OR Spectrum* 26, 579–601 (2004). [→available online](#).

- [5] C. Schwindt and N. Trautmann. Scheduling the production of rolling ingots: industrial context, model, and solution method. *International Transactions in Operational Research* 10, 547–563 (2003). [→available online](#).
- [4] K. Neumann, C. Schwindt, and N. Trautmann. Advanced production scheduling for batch plants in process industries. *OR Spectrum* 24, 251–279 (2002). [→available online](#).
- [3] C. Mellentien and N. Trautmann. Resource allocation with project management software. *OR Spektrum* 23, 383–394 (2001). [→available online](#).
- [2] C. Schwindt and N. Trautmann. Batch scheduling in process industries: an application of resource-constrained project scheduling. *OR Spectrum* 22, 501–524 (2000). [→available online](#).

Conference proceedings

- [67] M. Gnägi and N. Trautmann. A continuous-time mixed-binary linear programming formulation for the multi-site resource-constrained project scheduling problem. In: *Proceedings of the 2019 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by M. Wang, F. Li J. and Tsung, and A. Yeung. Macau, 2019, pp. 382–385.
- [67] D. Lerch and N. Trautmann. A lazy-constraints approach to resource-constrained project scheduling. In: *Proceedings of the 2019 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by M. Wang, F. Li J. and Tsung, and A. Yeung. Macau, 2019, pp. 531–535.
- [66] M. Gnägi, T. Rihm, and N. Trautmann. A continuous-time MILP formulation for the multi-mode resource-constrained project scheduling problem. In: *Proceedings of the 2018 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by T. Laosirihongthong, K. H. Chai, R. Jiao, and M. Xie. Bangkok, 2018, pp. 452–456.
- [65] M. Gnägi, A. Zimmermann, and N. Trautmann. A continuous-time unit-based MILP formulation for the resource-constrained project scheduling problem. In: *Proceedings of the 2018 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by T. Laosirihongthong, K. H. Chai, R. Jiao, and M. Xie. Bangkok, 2018, pp. 432–436.
- [64] T. Rihm and N. Trautmann. An Assignment-Based Continuous-Time MILP Model for the Resource-Constrained Project Scheduling Problem. In: *Proceedings of the 2017 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by A. De Meyer et al. Singapore, 2017, pp. 35–39.
- [63] T. Rihm and N. Trautmann. An assignment- and sequencing-based mixed-integer linear programming formulation for the resource-constrained project scheduling problem. In: *Proceedings of the International Symposium on Scheduling 2017*. Ed. by T. Kaihara and K. Nonobe. Nagoya, 2017, pp. 39–44.
- [62] O. Strub and N. Trautmann. A genetic algorithm for the UCITS-constrained index-tracking Problem. In: *Proceedings of the 2017 IEEE Congress on Evolutionary Computation*. Ed. by J. Lozano. San Sebastián, 2017, pp. 822–829.
- [61] N. Trautmann and M. Gnägi. An implementation of the parallel schedule-generation scheme for applying Microsoft Excel’s evolutionary solver to the resource-constrained project scheduling problem RCPSP. In: *Proceedings of the 2016 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by K. Suryadi et al. Bali, 2016, pp. 35–39.
- [60] O. Strub and N. Trautmann. An application of Microsoft Excel’s evolutionary solver based on a novel chromosome encoding scheme to the 1/N portfolio tracking problem. In: *Proceedings of the 2016 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by K. Suryadi et al. Bali, 2016, pp. 745–749.

- [59] M. Gnägi and N. Trautmann. Microsoft Excel’s Evolutionary Solver and the Resource-Constrained Project Scheduling Problem RCPSP: Solution Approach and Performance Analysis. In: *Proceedings of the 15th International Conference on Project Management and Scheduling*. Ed. by R. Ruiz and R. Alvarez-Valdes. Valencia, 2016, pp. 17–20.
- [58] T. Rihm and N. Trautmann. A decomposition heuristic for an assessment center planning problem. In: *Proceedings of the 15th International Conference on Project Management and Scheduling*. Ed. by R. Ruiz and R. Alvarez-Valdes. Valencia, 2016, pp. 206–209.
- [57] O. Strub and N. Trautmann. An iterated greedy heuristic for the 1/N portfolio tracking problem. In: *Proceedings of the 5th International Conference on Operations Research and Enterprise Systems*. Ed. by B. Vitoriano, G.H. Parlier, and D. de Werra. Rome, 2016, pp. 424–431.
- [56] N. Trautmann and M. Gnägi. On an application of Microsoft Excel’s evolutionary solver to the resource-constrained project scheduling problem RCPSP. In: *Proceedings of the 2015 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by T. Magnanti et al. Singapore, 2015, pp. 646–650.
- [55] A. Zimmermann and N. Trautmann. A list-scheduling approach for the planning of assessment centers. In: *Proceedings of the 7th Multidisciplinary International Conference on Scheduling: Theory and Applications*. Ed. by Z. Hanzálek, G. Kendall, B. McCollum, and P. Šůcha. Prague, 2015, pp. 541–554.
- [54] P. Baumann and N. Trautmann. Efficient symmetry-breaking formulations for grouping customer orders in a printing shop. In: *Proceedings of the 2014 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by P. Ahmed, R. Jiao, PL. Teh, and M. Xie. Malaysia, 2014, pp. 506–510.
- [53] J. Grüter, N. Trautmann, and A. Zimmermann. An MBLP model for scheduling assessment centers. In: *Operations Research Proceedings 2013*. Ed. by D. Huisman, I. Louwerse, and A. Wagelmans. Berlin, 2014, pp. 161–167.
- [52] T. Rihm and N. Trautmann. A MIP-based decomposition heuristic for resource-constrained project scheduling. In: *Proceedings of the 14th International Conference on Project Management and Scheduling*. Ed. by T. Fliedner, R. Kolisch, and A. Naber. München, 2014, pp. 193–196.
- [51] P. Baumann and N. Trautmann. An MILP formulation for scheduling of work-content-constrained projects. In: *Proceedings of the 14th International Conference on Project Management and Scheduling*. Ed. by T. Fliedner, R. Kolisch, and A. Naber. München, 2014, pp. 24–27.
- [50] A. Zimmermann and N. Trautmann. Scheduling of assessment centers: an application of resource-constrained project scheduling. In: *Proceedings of the 14th International Conference on Project Management and Scheduling*. Ed. by T. Fliedner, R. Kolisch, and A. Naber. Munich, 2014, pp. 263–266.
- [49] P. Baumann and N. Trautmann. Optimal scheduling of work-content-constrained projects. In: *Proceedings of the 2013 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by T. Laosirihongthong, R. Jiao, M. Xie, and R. Sirovetnukul. Bangkok, 2013.
- [48] P. Baumann and N. Trautmann. Operations scheduling in make-and-pack production: schedule construction and GA-based priority-rule generation procedures. In: *Proceedings of the 2012 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by S. Kwong, S. Ng, R. Jiao, and M. Xie. Hong Kong, 2012, pp. 362–366.
- [47] G. Brandinu and N. Trautmann. An integer-programming approach to benefit-maximal selection and scheduling of resource-constrained projects. In: *Proceedings of the 2012 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by S. Kwong, S. Ng, R. Jiao, and M. Xie. Hong Kong, 2012, pp. 807–811.

- [46] G. Brandinu and N. Trautmann. Sequential selection and heuristic scheduling of multiple resource-constrained projects. In: *13th International Conference on Project Management and Scheduling*. Leuven, 2012, pp. 102–105.
- [45] P. Baumann and N. Trautmann. A hybrid approach to large-scale short-term scheduling in make-and-pack production. In: *Proceedings of the 4th International Conference on Information Systems, Logistics and Supply Chain*. Québec, 2012.
- [44] P. Baumann and N. Trautmann. Heuristic decomposition and LP-based scheduling in make-and-pack production. In: *Proceedings of the 2011 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by S. Ng, R. Jiao, and M. Xie. Singapore, 2011, pp. 362–366.
- [43] N. Trautmann and G. Brandinu. Serial Scheme for Minimizing the Duration of Resource-Constrained Projects within Microsoft Project. In: *Proceedings of the 2011 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by S. Ng, R. Jiao, and M. Xie. Singapore, 2011, pp. 893–897.
- [42] N. Trautmann and G. Brandinu. Scheduling in service systems: an application in the event-tourism industry. In: *Proceedings of the 41th International Conference on Computers and Industrial Engineering*. Ed. by M. Dessouky. Los Angeles, 2011, pp. 866–871.
- [41] P. Baumann and N. Trautmann. Minimizing changeover times of a make-and-pack production process: model and case study. In: *Proceedings of the 5th Multidisciplinary International Conference on Scheduling: Theory and Application*. Ed. by J. Fowler, G. Kendall, and B. McCollum. Phoenix, 2011, pp. 539–541.
- [40] G. Brandinu and N. Trautmann. An MILP-Approach to the optimization of event-bus schedules: a scheduling application in the tourism sector. In: *Proceedings of the 5th Multidisciplinary International Conference on Scheduling: Theory and Application*. Ed. by J. Fowler, G. Kendall, and B. McCollum. Phoenix, 2011, pp. 137–145.
- [39] N. Trautmann, P. Baumann, N. Saner, and T. Schäfer. Decomposition approaches for multi-stage multi-product batch-production scheduling: a refined batching model. In: *Proceedings of the 5th Multidisciplinary International Conference on Scheduling: Theory and Application*. Ed. by J. Fowler, G. Kendall, and B. McCollum. Phoenix, 2011, pp. 596–598.
- [38] P. Baumann and N. Trautmann. A continuous-time MILP to compute schedules with minimum changeover times for a make-and-pack production. In: *21st European Symposium on Computer Aided Process Engineering*. Ed. by E. Pistikopoulos, M. Georgiadis, and A. Kokossis. Amsterdam: Elsevier, 2011, pp. 1060–1064.
- [37] N. Trautmann, P. Baumann, N. Saner, and T. Schäfer. Batch sizing in multi-stage, multi-product batch production systems. In: *21st European Symposium on Computer Aided Process Engineering*. Ed. by E. Pistikopoulos, M. Georgiadis, and A. Kokossis. Amsterdam: Elsevier, 2011, pp. 905–909.
- [36] N. Trautmann and P. Baumann. An iterative backward/forward technique for the scheduling of resource-constrained projects within Microsoft Project. In: *Proceedings of the 2010 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by Z. Lian, Z. Wu, M. Xie, and R. Jiao. Macau, 2010, pp. 1558–1562.
- [35] P. Baumann and N. Trautmann. An MILP approach to short-term scheduling of an industrial make-and-pack production facility with batch splitting and quality release times. In: *Proceedings of the 2010 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by Z. Lian, Z. Wu, M. Xie, and R. Jiao. Macau, 2010, pp. 1230–1234.
- [34] N. Trautmann and P. Baumann. A bidirectional schedule-improvement procedure for Microsoft Project. In: *Proceedings of the 40th International Conference on Computers and Industrial Engineering*. Ed. by I. Kacem. Awaji, 2010.
- [33] P. Baumann, N. Trautmann, and A. Zimmermann. An implementation of the iterative forward/backward scheduling technique in Microsoft Project. In: *Proceedings of the 12th International Conference on Project Management and Scheduling*. Ed. by V. T’kindt. Tours, 2010, pp. 81–84.

- [32] N. Trautmann and P. Baumann. Resource-constrained scheduling of a real project from the construction industry: a comparison of software packages for project management. In: *Proceedings of the 2009 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by H. Sund, R. Jiao, and M. Xie. Hong Kong, 2009, pp. 628–632.
- [31] N. Trautmann and P. Baumann. Resource-allocation capabilities of commercial project management software: an experimental analysis. In: *Proceedings of the 39th International Conference on Computers and Industrial Engineering*. Ed. by I. Kacem. Troyes, 2009, pp. 1155–1160.
- [30] N. Trautmann and P. Baumann. Project scheduling with precedence constraints and scarce resources: an experimental analysis of commercial project management software. In: *Operations Research Proceedings 2008*. Ed. by B. Fleischmann, K.-H. Borgwardt, R. Klein, and A. Tuma. Berlin: Springer, 2009, pp. 165–170.
- [29] N. Trautmann, C. Schwindt, H. Sagebiel, and R. Fink. A MIP/RCPSP decomposition approach to short-term planning in chemical batch production with non-identical parallel processing units. In: *2007 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by M Helander, M Xie, R Jiao, and K C Tan. Singapore, 2007, pp. 1342–1346.
- [28] C. Schwindt, R. Fink, and N. Trautmann. A priority-rule based method for scheduling in chemical batch production. In: *2007 IEEE International Conference on Industrial Engineering and Engineering Management*. Ed. by M Helander, M Xie, R Jiao, and K C Tan. Singapore, 2007, pp. 1347–1351.
- [27] C. Schwindt and N. Trautmann. Large-scale short-term planning in chemical batch production. In: *Proceedings of the 3rd Multidisciplinary International Conference on Scheduling: Theory and Application*. Ed. by P Baptiste, G Kendall, A Munier-Kordon, and F Sourd. Paris, 2007, pp. 490–497.
- [26] C. U. Fündeling and N. Trautmann. Supply chain management and advanced planning in the process industries. In: *Operations Research Proceedings 2006*. Ed. by K H Waldmann and U Stocker. Berlin: Springer, 2007, pp. 503–508.
- [25] C. U. Fündeling and N. Trautmann. Belegungsplanung einer Make&Pack-Anlage mit kontinuierlicher Prozessführung: Eine Fallstudie. In: *Management logistischer Netzwerke*. Ed. by H O Günther, D Mattfeld, and L Suhl. Berlin: Springer, 2007, pp. 301–320.
- [24] C. U. Fündeling and N. Trautmann. Scheduling of make and pack plants: a case study. In: *16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering*. Ed. by W Marquardt and C Pantelides. Amsterdam: Elsevier, 2006, pp. 1551–1556.
- [23] C. Schwindt, S. Herrmann, and N. Trautmann. Planning and scheduling of multipurpose continuous plants. In: *16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering – 21*. Ed. by W Marquardt and C Pantelides. Amsterdam: Elsevier, 2006, pp. 2159–2164.
- [22] N. Trautmann and C. Schwindt. Priority-rule based scheduling of chemical batch processes. In: *16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering*. Ed. by W Marquardt and C Pantelides. Amsterdam: Elsevier, 2006, pp. 2165–2170.
- [21] C. Schwindt, S. Herrmann, and N. Trautmann. A heuristic decomposition method for the short-term planning of continuous plants. In: *10th International Workshop on Project Management and Scheduling*. Poznan, 2006, pp. 313–318.
- [20] F. Ballestin and N. Trautmann. A metaheuristic approach for the resource-constrained weighted earliness-tardiness project scheduling problem. In: *10th International Workshop on Project Management and Scheduling*. Poznan, 2006, pp. 56–62.
- [19] N. Trautmann and C. Schwindt. A heuristic method for large-scale batch scheduling in the process industries. In: *Operations Research Proceedings 2005*. Ed. by H Haasis, H Kopfer, and J Schönberger. Berlin: Springer, 2006, pp. 155–160.

- [18] C. U. Fündeling and N. Trautmann. Belegungsplanung einer Make&Pack-Anlage: eine Fallstudie aus der Konsumgüterindustrie. In: *Supply Chain Management und Logistik*. Ed. by H O Günther, D Mattfeld, and L Suhl. Heidelberg: Physica, 2005, pp. 223–233.
- [17] N. Trautmann and C. Schwindt. A MINLP/RCPSD decomposition approach for the short-term planning of batch production. In: *15th European Symposium on Computer Aided Process Engineering*. Ed. by L Puigjaner and A Espuna. Amsterdam: Elsevier, 2005, pp. 1309–1314.
- [16] C. Schwindt and N. Trautmann. A priority-rule based method for batch production scheduling in the process industries. In: *Operations Research Proceedings 2003*. Ed. by D Ahr, R Fahrion, M Oswald, and G Reinelt. Berlin: Springer, 2004, pp. 111–118.
- [15] N. Trautmann. A two-stage approach for batch production scheduling in the process industries. In: *9th International Workshop on Project Management and Scheduling*. Nancy, 2004, pp. 291–294.
- [14] C. Schwindt and N. Trautmann. Scheduling of rolling ingots production. In: *Operations Research Proceedings 2002*. Ed. by U Leopold-Wildburger, F Rendl, and G Wäscher. Berlin: Springer, 2003, pp. 83–88.
- [13] N. Trautmann. Project scheduling with changeover times – schedule feasibility and network flows. In: *Proceedings of the International Conference on Industrial Engineering and Production Management, Vol. 1*. Porto, 2003, pp. 37–43.
- [12] C. Schwindt and N. Trautmann. Scheduling continuous material flows. In: *Proceedings of the 17th International Conference on CAD/CAM, Robotics and Factories of the Future*. Porto, 2002, pp. 757–764.
- [11] C. Schwindt and N. Trautmann. Storage problems in batch scheduling. In: *Operations Research Proceedings 2001*. Ed. by P Chamoni et al. Berlin: Springer, 2002, pp. 213–217.
- [10] N. Trautmann. Anlagenbelegungsplanung in der Prozessindustrie. In: *Operations Research Proceedings 2001*. Ed. by P Chamoni et al. Berlin: Springer, 2002, pp. 483–490.
- [9] N. Trautmann. Internet-based exercises and mini-exams for production and operations management. In: *Operations Research Proceedings 2001*. Ed. by P Chamoni et al. Berlin: Springer, 2002, pp. 465–469.
- [8] N. Trautmann. Storage problems in process industries. In: *The 8th International Workshop on Project Management and Scheduling*. Valencia, 2002, pp. 359–363.
- [7] N. Trautmann and C. Schwindt. Storage problems in process scheduling. In: *Proceedings of the 17th International Conference on CAD/CAM, Robotics and Factories of the Future*. Porto, 2002, pp. 749–756.
- [6] N. Trautmann. Batch scheduling in process industries: solution procedures. In: *Proceedings of the 17th International Conference on CAD/CAM, Robotics and Factories of the Future*. Durban, 2001, pp. 638–645.
- [5] N. Trautmann. Calendars in project scheduling. In: *Operations Research Proceedings 2000*. Ed. by B Fleischmann et al. Berlin: Springer, 2001, pp. 388–392.
- [4] N. Trautmann. Components of advanced planning systems for process industries. In: *Proceedings of the International Conference on Industrial Engineering and Production Management*. Québec City, 2001, pp. 253–262.
- [3] N. Trautmann. Batch scheduling in process industries – an application of resource-constrained project scheduling. In: *The 7th International Workshop on Project Management and Scheduling*. Osnabrück, 2000, pp. 275–277.

Articles in edited volumes

- [6] P. Baumann and N. Trautmann. Resource-constrained project scheduling with project management information systems. In: *Handbook on Project Management and Scheduling Vol. 2*. Ed. by C. Schwindt and J. Zimmermann. Cham: Springer International Publishing, 2015, pp. 1385–1400.
- [5] P. Baumann, C.-U. Fündeling, and N. Trautmann. The resource-constrained project scheduling problem with work-content constraints. In: *Handbook on Project Management and Scheduling Vol. 1*. Ed. by C. Schwindt and J. Zimmermann. Cham: Springer International Publishing, 2015, pp. 533–544.
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