

## Themen Seminar Logistikmanagement

- **Operations Research/Management Science:**

**Thema 1** (*Bin packing and cutting stock problems: Mathematical models and exact algorithms*)  
Delorme et al. (2016)

**Thema 2** (*The Fixed Charge Transportation Problem: An Exact Algorithm Based on a New Integer Programming Formulation*)  
Roberti et al. (2015)

**Thema 3** (*The Three-Dimensional Bin Packing Problem*)  
Martello et al. (2000)

**Thema 4** (*The 0-1 Knapsack Problem*)  
Pisinger and Toth (1998)

**Thema 5** (*Maximum-weight stable sets and safe lower bounds for graph coloring*)  
Held et al. (2012)

**Thema 6** (*A Branch-and-Repair Method for Three-Dimensional Bin Selection and Packing in E-Commerce*)  
Fontaine and Minner (2023)

**Thema 7** (*Arc routing based compact formulations for picker routing in single and two block parallel aisle warehouses*)  
Saylam et al. (2023)

**Thema 8** (*Scattered storage assignment: mathematical model and valid inequalities to optimize the intra-order item distances*)  
Albán et al. (2023)

**Thema 9** (*The impact of order batching and picking area zoning on order picking system performance*)  
Yu and De Koster (2009)

- **Transportlogistik:**

**Thema 10** (*An adaptive large neighborhood search approach for multiple traveling repairman problem with profits*)  
Avcı and Avcı (2019)

**Thema 11** (*A Branch-and-Price-and-Cut Algorithm for the Vehicle Routing Problem with Two-Dimensional Loading Constraints*)  
Zhang et al. (2022)

**Thema 12** (*A Compact Arc-Based ILP Formulation for the Pickup and Delivery Problem with Divisible Pickups and Deliveries*)  
Jargalsaikhan et al. (2021)

**Thema 13** (*A Branch and Price Algorithm for the Heterogeneous Fleet Multi-Depot Multi-Trip Vehicle Routing Problem with Time Windows*)  
Şahin and Hande (2022)

**Thema 14** (*An exact algorithm for the vehicle routing problem based on the set partitioning formulation with additional cuts*)  
Baldacci et al. (2008)

**Thema 15** (*Exact Branch-Price-and-Cut Algorithms for Vehicle Routing*)  
Costa et al. (2018)

**Thema 16** (*A Branch-and-Cut Algorithm for the Symmetric Generalized Traveling Salesman Problem*)  
Fischetti et al. (1997)

**Thema 17** (*A New Exact Algorithm for Single-Commodity Vehicle Routing with Split Pickups and Deliveries*)  
Li et al. (2023)

**Thema 18** (*Branch-Cut-and-Price for the Time-Dependent Green Vehicle Routing Problem with Time Windows*)  
Liu et al. (2023)

**Thema 19** (*An exact Price-Cut-and-Enumerate Method for the Capacitated Multitrip Vehicle Routing Problem with Time Windows*)  
Yang (2023)

**Thema 20** (*The Dial-a-Ride Problem with School Bell Time Adjustment*)  
Vercraene et al. (2023)

**Thema 21** (*A Branch-Cut-and-Price Approach for the Single-Trip and Multi-Trip Two-Echelon Vehicle Routing Problem with Time Windows*)  
Marques et al. (2022)

• **Standortplanung:**

**Thema 22** (*Median and Covering Location Problems with Interconnected Facilities*)  
Cherkesly et al. (2019)

**Thema 23** (*Revisiting the Hamiltonian  $p$ -median problem: A new formulation on directed graphs and a branch-and-cut algorithm*)  
Bektaş et al. (2019)

**Thema 24** (*Compact MILP formulations for the  $p$ -center problem*)  
Ales and Sourour (2018)

# Literatur

- Harol Mauricio Gámez Albán, Trijntje Cornelissens, and Kenneth Sörensen. Scattered storage assignment: Mathematical model and valid inequalities to optimize the intra-order item distances. *Computers & Operations Research*, 149:106022, 2023.
- Zacharie Ales and Elloumi Sourour. Compact milp formulations for the p-center problem. In *Combinatorial Optimization*, pages 14–25. Springer International Publishing, 2018. doi: 10.1007/978-3-319-96151-4\_2.
- Mualla Gonca Avci and Mustafa Avci. An adaptive large neighborhood search approach for multiple traveling repairman problem with profits. *Computers & Operations Research*, 111:367–385, November 2019. doi: 10.1016/j.cor.2019.07.012.
- Roberto Baldacci, Nicos Christofides, and Aristide Mingozzi. An exact algorithm for the vehicle routing problem based on the set partitioning formulation with additional cuts. *Math. Program.*, 115:351–385, 10 2008. doi: 10.1007/s10107-007-0178-5.
- Tolga Bektaş, Luís Gouveia, and Daniel Santos. Revisiting the hamiltonian p-median problem: A new formulation on directed graphs and a branch-and-cut algorithm. *European Journal of Operational Research*, 276(1):40 – 64, 2019. doi: 10.1016/j.ejor.2018.12.041.
- Juan José Miranda Bront, Isabel Méndez-Díaz, and Gustavo Vulcano. A column generation algorithm for choice-based network revenue management. *Operations Research*, 57(3):769–784, 2009. doi: 10.1287/opre.1080.0567.
- Marilène Cherkesly, Mercedes Landete, and Gilbert Laporte. Median and covering location problems with interconnected facilities. *Computers & Operations Research*, 107:1–18, July 2019. doi: 10.1016/j.cor.2019.03.002.
- Luciano Costa, Claudio Contardo, and Guy Desaulniers. Exact branch-price-and-cut algorithms for vehicle routing, 06 2018.
- Maxence Delorme, Manuel Iori, and Silvano Martello. Bin packing and cutting stock problems: Mathematical models and exact algorithms. *European Journal of Operational Research*, 255(1):1–20, November 2016. doi: 10.1016/j.ejor.2016.04.030.
- Matteo Fischetti, Juan José Salazar González, and Paolo Toth. A branch-and-cut algorithm for the symmetric generalized traveling salesman problem. *Operations Research*, 45(3):378–394, 1997.
- Pirmin Fontaine and Stefan Minner. A branch-and-repair method for three-dimensional bin selection and packing in e-commerce. *Operations research*, 71(1):273–288, 2023.
- Stephan Held, William Cook, and Edward C. Sewell. Maximum-weight stable sets and safe lower bounds for graph coloring. *Mathematical Programming Computation*, 4:363–381, 2012.
- Bolor Jargalsaikhan, Ward Romeijnnders, and Kees Jan Roodbergen. A compact arc-based ILP formulation for the pickup and delivery problem with divisible pickups and deliveries. *Transportation Science*, 55(2):336–352, March 2021. doi: 10.1287/trsc.2020.1016.
- Jiliu Li, Zhixing Luo, Roberto Baldacci, Hu Qin, and Zhou Xu. A new exact algorithm for single-commodity vehicle routing with split pickups and deliveries. *INFORMS Journal on Computing*, 35(1): 31–49, 2023.

- Yiming Liu, Yang Yu, Yu Zhang, Roberto Baldacci, Jiafu Tang, Xinggang Luo, and Wei Sun. Branch-cut-and-price for the time-dependent green vehicle routing problem with time windows. *INFORMS Journal on Computing*, 35(1):14–30, 2023.
- Guillaume Marques, Ruslan Sadykov, Rémy Dupas, and Jean-Christophe Deschamps. A branch-cut-and-price approach for the single-trip and multi-trip two-echelon vehicle routing problem with time windows. *Transportation Science*, 56(6):1598–1617, November 2022. doi: 10.1287/trsc.2022.1136. URL <https://doi.org/10.1287/trsc.2022.1136>.
- Silvano Martello, David Pisinger, and Daniele Vigo. The three-dimensional bin packing problem. *Operations research*, 48(2):256–267, 2000.
- David Pisinger and Paolo Toth. 0-1 knapsack problem. In D.-Z. Du and P. M. Pardalos, editors, *Knapsack Problems*, volume 1 of *Handbook Of Combinatorial Optimization*, chapter 2, pages 299–428. Kluwer Academic Publishers, 1998.
- Roberto Roberti, Enrico Bartolini, and Aristide Mingozzi. The fixed charge transportation problem: An exact algorithm based on a new integer programming formulation. *Management Science*, 61(6):1275–1291, June 2015. doi: 10.1287/mnsc.2014.1947.
- Munise Kübra Şahin and Yaman Hande. A branch and price algorithm for the heterogeneous fleet multi-depot multi-trip vehicle routing problem with time windows. *Transportation Science*, 56:1636–1657, 2022. doi: 10.1287/trsc.2022.1146.
- Serhat Saylam, Melih Çelik, and Haldun Süral. Arc routing based compact formulations for picker routing in single and two block parallel aisle warehouses. *European Journal of Operational Research*, 2023.
- Anita Schöbel and Reena Urban. The cheapest ticket problem in public transport. *Transportation Science*, 56:1432–1451, 2022. doi: 10.1287/trsc.2022.1138.
- Samuel Vercraene, Fabien Lehuédé, Thibaud Monteiro, and Olivier Péton. The dial-a-ride problem with school bell time adjustment. *Transportation science*, 57(1):156–173, 2023.
- Yu Yang. An exact price-cut-and-enumerate method for the capacitated multitrip vehicle routing problem with time windows. *Transportation Science*, 57(1):230–251, 2023.
- Mengfei Yu and René BM De Koster. The impact of order batching and picking area zoning on order picking system performance. *European Journal of Operational Research*, 198(2):480–490, 2009.
- Xiangyi Zhang, Lu Chen, Michel Gendreau, and André Langevin. A branch-and-price-and-cut algorithm for the vehicle routing problem with two-dimensional loading constraints. *Transportation Science*, March 2022. doi: 10.1287/trsc.2022.1135.