

## List of Publications

(for 2024 and before, later items can be found at the following link)

### [Andreas Fischer \(Technische Universität Dresden\)](#)

All links are underlined and can simply be clicked.

- ◆ A. Fischer, G. Haeser, T. P. Silveira: [On achieving strong necessary second-order properties in nonlinear programming](#). *Pacific Journal of Optimization* 20 (2024) 683-697
- ◆ A. Fischer, I. Litvinchev, T. Romanova, P. Stetsyuk, G. Yaskov: [Packing spheres with quasi-containment conditions](#). *Journal of Global Optimization* 90 (2024) 671-689, open access
- ◆ A. Fischer, A. F. Izmailov, M. V. Solodov: [The Levenberg-Marquardt method: an overview of modern convergence theories and more](#). *Computational Optimization and Applications* 89 (2024) 33-67, [Shareable Link](#)
- ◆ I. Litvinchev, A. Fischer, T. Romanova, P. Stetsyuk: [A new class of irregular packing problems reducible to sphere packing in arbitrary norms](#). *Mathematics* 12:7 (2024), Article No. 935, open access
- ◆ A. Fischer, A. F. Izmailov, M. Jelitte: [Behavior of Newton-Type Methods Near Critical Solutions of Nonlinear Equations with Semismooth Derivatives](#). *Journal of Optimization Theory and Applications* 203(2024) 2179-2205, [Shareable Link](#)
- ◆ A. Fischer, A. F. Izmailov, W. Scheck: [Techniques for adjusting dual iterates in the presence of critical Lagrange multipliers for optimization problems with inequality constraints](#). *Optimization*
- ◆ P. Stetsyuk, A. Fischer, O. Khomiak: [An exact nonsmooth penalty approach for a special class of linear programs](#). Proceedings of the 5th International Conference on Problems of Cybernetics and Informatics (PCI), August 28-30, 2023 IEEE Explore, Baku Azerbaijan
- ◆ A. Fischer, N. Strasdat: [An extended convergence framework applied to complementarity systems with degenerate and nonisolated solutions](#). *Pure and Applied Functional Analysis* 8 (2023) 1039-1054
- ◆ P. I. Stetsyuk, A. Fischer, O. M. Khomiak: [Unified Representation of the classical ellipsoid method](#). *Cybernetics and Systems Analysis* 59 (2023) 784-793, [Shareable Link](#)
- ◆ A. Fischer, O. Khomyak, P. Stetsyuk: [The ellipsoid method and computational aspects](#). *Communications in Optimization Theory* 2023 (2023), Article ID 21, open access
- ◆ A. Fischer, I. Litvinchev, T. Romanova, P. Stetsyuk, G. Yaskov: [Quasi-packing different spheres with ratio conditions in a spherical container](#). *Mathematics* 11:9 (2023) , Article No. 2033, open access
- ◆ U. Scheithauer, T. Romanova, O. Pankratov, E. Schwarzer-Fischer, M. Schwentenwein, F. Ertl, A. Fischer: [Potentials of numerical methods for](#)

**increasing the productivity of additive manufacturing processes.**

*Ceramics* 6 (2023) 630-650, open access

- ◆ T. E. Romanova, P. I. Stetsyuk, A. Fischer, G. M. Yaskov: **Proportional packing of circles in a circular container.** *Cybernetics and Systems Analysis* 59 (2023) 82-89, [Shareable Link](#)
- ◆ A. Fischer, A. F. Izmailov, M. Jelitte: **Stability of singular solutions of nonlinear equations with restricted smoothness assumptions.** *Journal of Optimization Theory and Applications* 196 (2023) 1008-1035, open access
- ◆ P. I. Stetsyuk, A. Fischer, O. M. Khomiak: **Ellipsoid methods with space scaling.** In: F. Aliev, T. Basar (eds.): Proceedings of the 8th International Conference on Control and Optimization with Industrial Applications, August 24-26, Baku, Azerbaijan, [Volume I](#), pp. 402-404
- ◆ A. Fischer, A. B. Zemkoho, S. Zhou: **Semismooth Newton-type method for bilevel optimization: global convergence and extensive numerical experiments.** *Optimization Methods and Software* 37 (2022) 1770-1804
- ◆ A. Fischer, M. Jelitte, K. Schönefeld: **A local analysis for eigenvalue complementarity problems.** *Pure and Applied Functional Analysis* 6 (2021) 1191-1210
- ◆ P. Stetsyuk, A. Fischer, O. Khomyak: **Maximum Penalty Function in Linear Programming (Ukrainian).** *Physico-Mathematical Modelling and Informational Technologies* 33 (2021) 156-160
- ◆ A. Fischer, A.F. Izmailov, M. Jelitte: **Newton-type methods near critical solutions of piecewise smooth nonlinear equations.** *Computational Optimization and Applications* 80 (2021) 587-615, [Shareable Link](#)
- ◆ A. Fischer, M. Jelitte: **On Noncritical Solutions of Complementarity Systems.** In V.K. Singh et al (eds.): [Recent Trends in Mathematical Modeling and High Performance Computing](#), Birkhäuser, Cham 2021, pp. 129-141
- ◆ P. Stetsyuk, A. Fischer, O. Pichugina: **A penalty approach to linear programs with many two-sided constraints.** In P. Pardalos et al. (eds.): *Mathematical Optimization Theory and Operations Research. MOTOR 2021. Lecture Notes in Computer Science*, vol 12755, Springer, Cham 2021, pp. 206-217, [Shareable Link](#)
- ◆ A. Fischer, A.F. Izmailov, M.V. Solodov: **Unit stepsize for the Newton method close to critical solutions.** *Mathematical Programming* 187 (2021) 697-721, [Shareable Link](#)
- ◆ M. A. Dar, A. Fischer, J. Martinovic, G. Scheithauer: **Integer linear programming formulations for the minimum connectivity problem and model reduction principles.** *Discrete Optimization* 40 (2021), Article No. 100623
- ◆ F. Theurich, A. Fischer, G. Scheithauer: **A branch-and-bound approach for a vehicle routing problem with customer costs.** *EURO Journal on Computational Optimization* 9 (2021), Article No. 100003

- ◆ A. Fischer, A.F. Izmailov, M.V. Solodov: **Accelerating convergence of the globalized Newton method to critical solutions of nonlinear equations.** *Computational Optimization and Applications* 78 (2021) 273-286, [Shareable Link](#)
- ◆ A. Fischer, A.F. Izmailov, M. Jelitte: **Constrained Lipschitzian error bounds and noncritical solutions of constrained equations.** *Set-Valued Variational Analysis* 29 (2021) 745-765, open access

## 2020 and before

- ◆ A. Fischer, A.F. Izmailov, W. Scheck: **Adjusting dual iterates in the presence of critical Lagrange multipliers.** *SIAM Journal on Optimization* 30 (2020) 1555-1581
- ◆ P. Stetsyuk, A. Fischer, O. Khomyak: **The generalized ellipsoid method and its implementation.** In M. Jaćimović et al. (eds.): *Communications in Computer Science vol. 1145 (Optimization and Applications - OPTIMA 2019)* Springer, Cham 2020, 355-370, [Shareable Link](#)
- ◆ P. Stetsyuk, A. Fischer, V. Lyashko: **An ellipsoid method for minimization of convex functions** (Ukrainian). *NAUKMA Research Papers. Computer Science 2* (2019) 16-21
- ◆ A.F. Izmailov, P.I. Stetsyuk, A. Fischer: **Algorithm EMSHOR and its Octave realization** (Russian). *Компьютерная Математика 2* (2019) 132-142
- ◆ J. Martinovic, M. Hähnel, G. Scheithauer, W. Dargie, A. Fischer: **Cutting stock problems with nondeterministic item lengths: a new approach to server consolidation.** *4OR* 17 (2019) 173-200, [Shareable Link](#)
- ◆ M.A. Dar, A. Fischer, J. Martinovic, G. Scheithauer: **A computational study of reduction techniques for the minimum connectivity inference problem.** In V.K. Singh et al. (eds): *Advances in Mathematical Methods and High Performance Computing*, Springer 2019, pp. 135-148
- ◆ R. Behling, A. Fischer, K. Schönefeld, N. Strasdat: **A special complementarity function revisited.** *Optimization* 68 (2019) 65-79; up to a certain limit, the paper can be downloaded from [here](#) without a license
- ◆ M.A. Dar, A. Fischer, J. Martinovic, G. Scheithauer: **An improved flow-based formulation and reduction principles for the minimum connectivity inference problem.** *Optimization* 68 (2019) 1963-1983; up to a certain limit the, paper can be downloaded from [here](#) without a license
- ◆ A. Fischer, A.F. Izmailov, M.V. Solodov: **Local attractors of Newton-type methods for constrained equations and complementarity problems with nonisolated solutions.** *Journal of Optimization Theory and Applications* 180 (2019) 140-169, [Shareable Link](#)
- ◆ J. Israel, A. Fischer, M. Dörpinghaus: **On wireless board-to-board communication with cascaded Butler matrices.** *15th International Symposium on Wireless Communication Systems (ISWCS 2018)*, Portugal

- ◆ A. Fischer, M. Herrich: **Newton-type methods for Fritz John systems of generalized Nash equilibrium problems**. *Pure and Applied Functional Analysis* 3 (2018) 587-602
- ◆ M. Hähnel, J. Martinovic, G. Scheithauer, A. Fischer, A. Schill, W. Dargie: **Extending the cutting stock problem for consolidating services with stochastic workloads**. *IEEE Transactions on Parallel and Distributed Systems* 29 (2018) 2478-2488; [PDF](#)
- ◆ J. Israel, A. Fischer: **Discrete worst-case SINR-maximization**. *Proceedings of the 17th IEEE International Conference on Ubiquitous Wireless Broadband (ICUWB 2017)*, IEEE 2018
- ◆ A. Fischer, M. Herrich, A.F. Izmailov, W. Scheck, M.V. Solodov: **A globally convergent LP-Newton method for piecewise smooth constrained equations: escaping nonstationary accumulation points**. *Computational Optimization and Applications* 69 (2018) 325-349, [Shareable Link](#)
- ◆ J. Martinovic, E. Jorswieck, G. Scheithauer, A. Fischer: **Integer linear programming formulations for cognitive radio resource allocation**. *IEEE Wireless Communications Letters* 6 (2017) 494-497
- ◆ C. P. Bras, A. Fischer, J. J. Judice, K. Schönefeld, S. Seifert: **A block active set algorithm with spectral choice line search for the symmetric eigenvalue complementarity problem**. *Applied Mathematics and Computation* 294 (2017) 36-48
- ◆ R. Behling, A. Fischer, G. Haeser, A. Ramos, K. Schönefeld: **On the constrained error bound condition and the projected Levenberg-Marquardt method**. *Optimization* 66 (2017) 1397-1411; up to a certain limit, the paper can be downloaded from [here](#) without a license
- ◆ J. Israel, A. Fischer, J. Martinovic: **Discrete and phase-only receive beamforming**. In V.K. Singh et al. (eds.): *Modern Mathematical Methods and High Performance Computing in Science and Technology*, Springer Proceedings in Mathematics & Statistics, Springer 2016, pp. 141-153, [Shareable Link](#)
- ◆ A. Fischer, M. Herrich, A.F. Izmailov, M.V. Solodov: **A globally convergent LP-Newton method**. *SIAM Journal on Optimization* 26 (2016) 2012-2033; see also the related report **Detailed numerical results for several variants of a globally convergent LP-Newton method**
- ◆ A. Fischer, M. Herrich, A.F. Izmailov, M.V. Solodov: **Convergence conditions for Newton-type methods applied to complementarity systems with nonisolated solutions**. *Computational Optimization and Applications* 63 (2016) 425-459, [Shareable Link](#)

## 2015 and before

- ◆ A. Fischer, G. Langensiepen, K. Luig, N. Strasdat, T. Thies: **Efficient optimization of hyper-parameters for least-squares support vector regression**. *Optimization Methods and Software* 30 (2015) 1095-1108; up to a certain limit, the paper can be downloaded from [here](#) without a license

- ◆ M. Jennings, B. Klein, R. Hahnel, D. Plettemeier, D. Fritsche, G. Tretter, C. Carta, F. Ellinger, T. Nordmann, M. Schroeter, K. Nieweglowski, K. Bock, J. Israel, A. Fischer, N. Ul Hassan, L. Landau, M. Dörpinghaus, G. Fettweis: **[Energy-efficient transceivers for ultra-highspeed computer board-to-board communication](#)**. *Proceedings of the 15th IEEE International Conference on Ubiquitous Wireless Broadband (ICUWB 2015)*, IEEE 2015
- ◆ J. Israel, A. Fischer, J. Martinovic: **[A branch-and-bound algorithm for discrete receive beamforming with improved bounds](#)**. *Proceedings of the 15th IEEE International Conference on Ubiquitous Wireless Broadband (ICUWB 2015)*, IEEE 2015
- ◆ A. Fischer, G. Scheithauer: **[Cutting and Packing Problems with Placement Constraints](#)**. In G. Fasano, J.D. Pinter (eds.): *Optimized Packings with Applications*, Springer 2015, pp. 119-156
- ◆ A. Fischer: **[Comments on: Critical Lagrange multipliers: What we currently know about them, how they spoil our lives, and what we can do about it](#)**. *TOP 23* (2015) 27-31, [Shareable Link](#)
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- ◆ A. Fischer, M. Herrich, K. Schönefeld: **[Generalized Nash Equilibrium Problems - Recent Advances and Challenges](#)**. *Pesquisa Operacional* 34 (2014) 521-558; [PDF](#)
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- ◆ R. Behling, A. Fischer, M. Herrich, A. Iusem, Y. Ye: **[A Levenberg-Marquardt method with approximate projections](#)**. *Computational Optimization and Applications* 59 (2014) 5-26, [Shareable Link](#)
- ◆ F. Facchinei, A. Fischer, M. Herrich: **[An LP-Newton method: nonsmooth equations, KKT systems, and nonisolated solutions](#)**. *Mathematical Programming* 146 (2014) 1-36, [Shareable Link](#)
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- ◆ F. Facchinei, A. Fischer, M. Herrich: **[A family of Newton methods for nonsmooth constrained systems with nonisolated solutions](#)**. *Mathematical Methods of Operations Research* 77 (2013) 433-443, [Shareable](#)

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- ◆ J. Israel, A. Fischer: [An approach to discrete receive beamforming](#). *Proceedings of the 9th International ITG Conference on Systems, Communications and Coding (SCC 2013)*
- ◆ C. Brunner, A. Fischer, K. Luig, T. Thies: [Pairwise Support Vector Machines and their application to large scale problems](#). *Journal of Machine Learning Research* 13 (2012) 2279-2292; for a previous version with some further material, see Technical Report [Pairwise kernels, Support Vector Machines, and the application to large scale problems](#)
- ◆ R. Behling, A. Fischer: [A unified local convergence analysis of inexact constrained Levenberg-Marquardt methods](#). *Optimization Letters* 6 (2012) 927-940, [Shareable Link](#)

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- ◆ A. Fischer, A. Friedlander: [A new line search inexact restoration approach for nonlinear programming](#). *Computational Optimization and Applications* 46 (2010) 333-346, [Shareable Link](#)
- ◆ Y. Dong, A. Fischer: [A family of operator splitting methods revisited](#). *Nonlinear Analysis* 72 (2010) 4307-4315
- ◆ A. Fischer, P. K. Shukla, M. Wang: [On the inexactness level of robust Levenberg-Marquardt methods](#). *Optimization* 59 (2010) 273-287; up to a certain limit, the paper can be downloaded [here](#) without license
- ◆ F. Facchinei, A. Fischer, V. Piccialli: [Generalized Nash Equilibrium Problems and Newton Methods](#). *Mathematical Programming* 117 (2009) 163-194; the paper is [one of the eight most cited articles](#) published in Mathematical Programming in 2009-2010, [Shareable Link](#)
- ◆ F. Richter, A. Fischer, R. Habendorf, G. Fettweis: [Transmitter-based minimization of error rates in the downlink of wireless systems](#). *GLOBECOM 2008*, 3433-3437, *IEEE 2008*
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- ◆ F. Facchinei, A. Fischer, V. Piccialli: [On generalized Nash games and variational inequalities](#). *Operations Research Letters* 35 (2007) 159-164
- ◆ B. Ristau, G. Fettweis, G. Scheithauer, A. Fischer: [Linear Programming in Embedded Systems](#). *ECMI Newsletter* 41 (2007) 29-31
- ◆ Y. Dong, A. Fischer: [A framework for analyzing local convergence](#)

**properties with applications to proximal point algorithms**. *Journal of Optimization Theory and Applications* 131 (2006) 53-68, [Shareable Link](#)

- ◆ R. Bartholomaeus, A. Fischer: **Energy management of fuel cell vehicles - using prediction of power demand**. In *Proceedings of the International Conference and Trade Fair on Hydrogen and Fuel Cell Technologies*, Hamburg 2005, pp. 2-20
- ◆ R. Bartholomaeus, A. Fischer: **Energy management of fuel cell vehicles operating in fixed-route service**. *3rd European Polymer Electrolyte Fuel Cell (PEFC) Forum*, Proceedings CD File No. B095, Lucerne 2005, 19 p.
- ◆ P. Kaletta, K. Wolf, A. Fischer: **Structural optimization in aircraft engineering using support vector machines**. In D. Ahr et al. (eds.): *Operations Research Proceedings 2003*, Springer, Heidelberg 2004, pp. 411-418; [doi](#)
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- ◆ F. Facchinei, A. Fischer, C. Kanzow: **On the identification of zero variables in an interior-point framework**. *SIAM Journal on Optimization* 10 (2000) 1058-1078
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- ◆ F. Facchinei, A. Fischer, C. Kanzow: **Regularity properties of a semismooth reformulation of variational inequalities**. *SIAM Journal on Optimization* 8 (1998) 850-869
- ◆ A. Fischer: **New constrained optimization reformulation of complementarity problems**. *Journal of Optimization Theory and Applications* 97 (1998) 105-117, [Shareable Link](#)
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- ◆ L. Fernandes, A. Fischer, J. Judice, C. Requejo, J. Soares: **A block active set algorithm for large-scale quadratic programming with box constraints**. *Annals of Operations Research* 81 (1998) 75-95, [Shareable Link](#)
- ◆ F. Facchinei, A. Fischer, C. Kanzow: **A semismooth Newton method for variational inequalities: The case of box constraints**. In M. C. Ferris, J.-S. Pang (eds.): *Complementarity and Variational Problems - State of the Art*, SIAM, Philadelphia 1997, pp. 76-90
- ◆ A. Fischer: **Solution of monotone complementarity problems with locally Lipschitzian functions**. *Mathematical Programming* 76 (1997) 513-532, [Shareable Link](#)
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- ◆ A. Fischer: **An algorithm for monotone complementarity problems with locally Lipschitzian functions**. In P. Kleinschmidt et al. (eds.): *Operations Research Proceedings 1995*, Springer, Berlin 1996, pp. 25-29

- ◆ A. Fischer, C. Kanzow: **On finite termination of an iterative method for linear complementarity problems**. *Mathematical Programming* 74 (1996) 279-292, [Shareable Link](#)
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- ◆ A. Fischer: **On the local superlinear convergence of a Newton-type method for LCP under weak conditions**. *Optimization Methods and Software* 6 (1995) 83-107
- ◆ A. Fischer: **A Newton-type method for positive semidefinite linear complementarity problems**. *Journal of Optimization Theory and Applications* 86 (1995) 585-608, [Shareable Link](#)
- ◆ A. Fischer: **A special Newton-type optimization method**. *Optimization* 24 (1992) 269-284