



OTTO VON GUERICKE  
UNIVERSITÄT  
MAGDEBURG

**MATH**

FAKULTÄT FÜR  
MATHEMATIK

# Publikationsbericht 2020

Fakultät für Mathematik

# FAKULTÄT FÜR MATHEMATIK

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## 1. LEITUNG

Prof. Dr. Hans-Christoph Grunau (Dekan)  
Prof. Dr. Volker Kaibel (Prodekan und Studiendekan)

## 2. VERÖFFENTLICHUNGEN

### DISSERTATIONEN

#### **Ananiadi, Lamprini; Kahle, Thomas [AkademischeR BetreuerIn]**

Symmetry in toric geometry  
Magdeburg, 2020, 104 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 99-104]

#### **Borger, Christopher; Nill, Benjamin [AkademischeR BetreuerIn]**

Mixed lattice polytope theory with a view towards sparse polynomial systems  
Magdeburg, 2020, XV, 136 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 109-113]

#### **Gerike, Daniel; Pott, Alexander [AkademischeR BetreuerIn]**

Determining the cycle structure of permutation polynomials of shape  $X^t + \gamma \text{Tr}(X^k)$   
Magdeburg, 2020, V, 94 Seiten, Formeln, Tabellen, 30 cm;  
[Im Titel ist "t" und "k" hochgestellt; Literaturverzeichnis: Seite 93-94]

#### **Jost, Felix; Sager, Sebastian [AkademischeR BetreuerIn]**

Model-based optimal treatment schedules for acute leukemia  
Magdeburg, 2020, x, 170 Seiten, Illustrationen;  
[Literaturverzeichnis: Seite 152-170]

#### **Mierswa, Alina; Deckelnick, Klaus [AkademischeR BetreuerIn]**

Error estimates for a finite difference approximation of mean curvature flow for surfaces of torus type  
Magdeburg, 2020, 99 Seiten, Illustrationen, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 97-99]

#### **Mlinari, Petar; Benner, Peter [AkademischeR BetreuerIn]**

Structure-preserving model order reduction for network systems  
Magdeburg, 2020, xxiii, 153 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 141-150]

#### **Munir, Taj; Warnecke, Gerald [AkademischeR BetreuerIn]**

Analysis of coupling interface problems for bi-domain diffusion equations  
Magdeburg, 2020, x, 151 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 149-151]

**Röttger, Frank; Kahle, Thomas [AkademischeR BetreuerIn]; Schwabe, Rainer [AkademischeR BetreuerIn]**

Geometry of optimal design and limit theorems  
Magdeburg, 2020, IX, 105 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 99-105]

**Schmidt, Marius; Schwabe, Rainer [AkademischeR BetreuerIn]**

Optimale Versuchsplanung für Zählraten mit zufälligen Blockeffekten  
Magdeburg, 2020, IV, 119 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 116-119]

**Weinhandl, Roman; Benner, Peter [AkademischeR BetreuerIn]; Richter, Thomas [AkademischeR BetreuerIn]**

Low-rank methods for parameter-dependent fluid-structure interaction problems  
Magdeburg, 2020, xx, 129 Seiten, Formeln;  
[Literaturverzeichnis: Seite 121-126]

# INSTITUT FÜR ALGEBRA UND GEOMETRIE

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## 1. LEITUNG

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Prof. Dr. Alexander Pott  
Prof. Dr. Stefanie Rach  
Prof. Dr. Petra Schwer

## 2. VERÖFFENTLICHUNGEN

### BEGUTACHTETE ZEITSCHRIFTENAUFsätze

#### **Balletti, Gabriele; Borger, Christopher**

Families of lattice polytopes of mixed degree one  
Journal of combinatorial theory / A: JCTA - Amsterdam [u.a.]: Elsevier, Volume 173 (2020), article 105229;  
[Imp.fact.: 0.958]

#### **Borello, Martino; Cruz, Javier; Willems, Wolfgang**

A note on linear complementary pairs of group codes  
Discrete mathematics - Amsterdam [u.a.]: Elsevier, Volume 343(2020), issue 8, article 111905;  
[Imp.fact.: 0.77]

#### **Borello, Martino; Willems, Wolfgang**

Group codes over fields are asymptotically good  
Finite fields and their applications - Orlando, Fla. [u.a.]: Elsevier, Volume 68(2020), article 101738;  
[Imp.fact.: 1.478]

#### **Borger, Christopher; Nill, Benjamin**

On defectivity of families of full-dimensional point configurations  
Proceedings of the American Mathematical Society / B/ American Mathematical Society - Providence, RI: Soc.,  
Bd. 7.2020, S. 43-51;

#### **Cifuentes, Diego; Kahle, Thomas; Parrilo, Pablo**

Sums of squares in Macaulay2  
Journal of Software for Algebra and Geometry: Macaulay2: JSAG - [S.l.], Bd. 10.2020, S. 17-24;

#### **Do, Trong Hoang; Kahle, Thomas**

Hilbert-Poincaré series of parity binomial edge ideals and permanent ideals of complete graphs  
Collectanea mathematica - Barcelona . - 2020, insges. 9 S. ;  
[Online first]  
[Imp.fact.: 0.769]

**Duarte, Eliana; Görgen, Christiane**

Equations defining probability tree models

Journal of symbolic computation: an international journal - Amsterdam: Elsevier, Bd. 99.2020, S. 127-146;  
[Imp.fact.: 0.876]

**Graeber, Marius; Schwer, Petra**

Shadows in coxeter groups

Annals of combinatorics: AC - [Cham (ZG)]: [Springer International Publishing AG], Bd. 24.2020, 1, S. 119-147;  
[Imp.fact.: 0.507]

**Higashitani, Akihiro; Nill, Benjamin; Tsuchiya, Akiyoshi**

Gorenstein polytopes with trinomial  $h$ -polynomials

Beiträge zur Algebra und Geometrie - Berlin: Springer . - 2020;  
[Online first]

**Kahle, Thomas; Röttger, Frank; Schwabe, Rainer**

Geometrie optimaler Versuchspläne

Mitteilungen der Deutschen Mathematiker-Vereinigung/ Deutsche Mathematiker-Vereinigung - Berlin: DMV,  
Bd. 28.2020, 2, S. 71-76;

**Karrer, Annette; Schwer, Petra; Struyve, Koen**

The triangle groups  $(2, 4, 5)$  and  $(2, 5, 5)$  are not systolic

Graphs and combinatorics - Tokyo: Springer-Verl. Tokyo, Bd. 36.2020, 6, S. 1741-1782;  
[Imp.fact.: 0.507]

**Li, Shuxing; Meidl, Wilfried; Polujan, Alexandr; Pott, Alexander; Riera, Constanza; Stanica, Pantelimon**

Vanishing flats - a combinatorial viewpoint on the planarity of functions and their application

IEEE transactions on information theory: a journal devoted to the theoretical and experimental aspects of information transmission, processing, and utilization ; a publication of the IEEE Information Theory Society/ Institute of Electrical and Electronics Engineers - Piscataway, NJ: IEEE, Bd. 66.2020, 11, S. 7101-7112;  
[Imp.fact.: 3.036]

**Li, Shuxing; Pott, Alexander**

A direct construction of primitive formally dual pairs having subsets with unequal sizes

Cryptography and communications: discrete structures, boolean functions and sequences - New York, NY: Springer, Bd. 12.2020, S. 469-483;  
[Imp.fact.: 1.291]

**Li, Shuxing; Pott, Alexander**

Intersection distribution, non-hitting index and Kakeya sets in affine planes

Finite fields and their applications - Orlando, Fla. [u.a.]: Elsevier, Volume 66(2020), article 101691;  
[Imp.fact.: 1.478]

**Liu, Y.; Willems, Wolfgang**

On Hilbert divisors of Brauer characters

Journal of algebra - San Diego, Calif.: Elsevier, Bd. 558.2020, S. 595-610;  
[Imp.fact.: 0.666]

**Liu, Yanjun; Willems, Wolfgang; Xiong, Huan; Zhang, Jiping**

Trivial intersection of blocks and nilpotent subgroups

Journal of algebra - San Diego, Calif.: Elsevier, Bd. 559.2020, S. 510-528;  
[Imp.fact.: 0.745]

**Nill, Benjamin**

The mixed degree of families of lattice polytopes

Annals of combinatorics: AC - [Cham (ZG)]: [Springer International Publishing AG], Bd. 24.2020, S. 203-216;  
[Imp.fact.: 0.507]

**Polujan, Alexandr; Pott, Alexander**

Cubic bent functions outside the completed Maiorana-McFarland class

Designs, codes and cryptography: an international journal - Dordrecht [u.a.]: Springer Science + Business Media B.V, Bd. 88.2020, 9, S. 1701-1722;  
[Imp.fact.: 1.524]

**Polujan, Alexandr; Pott, Alexander**

On design-theoretic aspects of Boolean and vectorial bent function

IEEE transactions on information theory: a journal devoted to the theoretical and experimental aspects of information transmission, processing, and utilization ; a publication of the IEEE Information Theory Society/ Institute of Electrical and Electronics Engineers - Piscataway, NJ: IEEE . - 2020;  
[Online first]  
[Imp.fact.: 3.036]

**Rach, Stefanie; Ufer, Stefan**

Which prior mathematical knowledge is necessary for study success in the university study entrance phase? - results on a new model of knowledge levels based on a reanalysis of data from existing studies  
International journal of research in undergraduate mathematics education - New York, NY: Springer . - 2020;  
[Online first]

**Schwer, Petra**

Root operators, root groups and retractions

Journal of combinatorial algebra: JCA - Zürich: European Mathematical Society Publishing House, Bd. 2.2018, 3, S. 215-230;

**Çemeliolu, Ayça; Meidl, Wilfried; Pott, Alexander**

Vectorial bent functions in odd characteristic and their components

Cryptography and communications: discrete structures, boolean functions and sequences - New York, NY: Springer . - 2020;  
[Online first]  
[Imp.fact.: 1.291]

## NICHT BEGUTACHTETE ZEITSCHRIFTENAUFsätze

**Rach, Stefanie; Ritter, Sebastian**

Wer die Wahl hat ... Situationales Interesse durch Wahlaufgaben zu verschiedenen Kontexten steigern  
Mathematik lehren: erfolgreich unterrichten: Konzepte und Materialien - Hannover: Friedrich Verlag GmbH . - 2020, 221, S. 26-29

## BEGUTACHTETE BUCHBEITRäge

**Kaspers, Christian; Pott, Alexander**

On solving isomorphism problems about 2-designs using block intersection numbers

Finite Fields and their Applications: Proceedings of the 14th International Conference on Finite Fields and their Applications, Vancouver, June 3-7, 2019 - Berlin: De Gruyter, 2020; Davis, James A . - 2020, S. 51-70;  
[Konferenz: 14th International Conference on Finite Fields and their Applications, Vancouver, June 3-7, 2019]

## DISSERTATIONEN

**Ananiadi, Lamprini; Kahle, Thomas [AkademischeR BetreuerIn]**

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# INSTITUT FÜR ANALYSIS UND NUMERIK

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## 1. LEITUNG

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Prof. Dr. Thomas Richter (Geschäftsführender Leiter)  
Prof. Dr. Miles Simon  
Prof. Dr. Gerald Warnecke  
Priv.-Doz. Dr. Bernd Rummler

## 2. VERÖFFENTLICHUNGEN

### BEGUTACHTETE ZEITSCHRIFTENAUFsätze

**Ali, Ahmad Ahmad; Deckelnick, Klaus; Hinze, Michael**

Global minima for optimal control of the obstacle problem  
Control, optimisation and calculus of variations: COCV - Les Ulis: EDP Sciences, Volume 26 (2020), article 64,  
22 Seiten;  
[Imp.fact.: 1.181]

**Bause, Markus; Köcher, Uwe; Radu, F. A.; Schieweck, Friedhelm.**

Post-processed Galerkin approximation of improved order for wave equations  
Mathematics of computation - Providence, RI : Soc., Bd. 89 (2020), 322, S. 595-627  
[Imp.fact.: 2.07]

**Benner, Peter; Du, Xin; Yang, Gianghong; Ye, Dan**

Balanced truncation of linear time-invariant systems over finite-frequency ranges  
Advances in computational mathematics - Bussum: Baltzer Science Publ., Volume 46(2020), article number: 82;  
[Imp.fact.: 1.748]

**Benner, Peter; Heinkenschloss, Matthias; Saak, Jens; Weichelt, Heiko K.**

Efficient solution of large-scale algebraic Riccati equations associated with index-2 DAEs via the inexact low-rank  
Newton-ADI method  
Applied numerical mathematics: transactions of IMACS - Amsterdam [u.a.]: Elsevier, Bd. 152.2020, S. 338-354;  
[Imp.fact.: 1.678]

**Benner, Peter; Werner, Steffen W. R.**

Frequency- and time-limited balanced truncation for large-scale second-order systems  
Linear algebra and its applications: LAA - New York, NY: American Elsevier Publ. . - 2020;  
[Online first]  
[Imp.fact.: 0.988]



**Benner, Peter; Werner, Steffen W. R.**

Hankel-norm approximation of large-scale descriptor systems

Advances in computational mathematics - Bussum: Baltzer Science Publ., Volume 46 (2020), article number 40, 31 Seiten;

[Imp.fact.: 1.638]

**Daddi-Moussa-Ider, Abdallah; Sprenger, Alexander R.; Amarouchene, Yacine; Salez, Thomas; Schönecker, Clarissa; Richter, Thomas; Löwen, Hartmut; Menzel, Andreas M.**

Axisymmetric Stokes flow due to a point-force singularity acting between two coaxially positioned rigid no-slip disks

Journal of fluid mechanics - Cambridge [u.a.]: Cambridge Univ. Press, Volume 904 (2020), article A34, 26 Seiten;

[Imp.fact.: 3.137]

**Failer, L.; Richter, Thomas**

A Newton multigrid framework for optimal control of fluidstructure interactions

Optimization and engineering: international multidisciplinary journal to promote optimization theory & applications in engineering science - Dordrecht [u.a.]: Springer Science + Business Media B.V. - 2020;

[Online first]

[Imp.fact.: 1.824]

**Failer, L.; Richter, Thomas**

A parallel Newton multigrid framework for monolithic fluid-structure interactions

Journal of scientific computing - New York, NY [u.a.]: Springer Science + Business Media B.V., Volume 82(2020), article 28;

[Imp.fact.: 2.228]

**Frei, Stefan; Richter, Thomas**

Efficient approximation of flow problems with multiple scales in time

Multiscale modeling & simulation - Philadelphia, Pa.: SIAM, Bd. 18.2020, 2, S. 942-969, insges. 28 S.;

[Gesehen am 04.08.2020]

**Grunau, Hans-Christoph; Miyake, Nobuhito; Okabe, Shinya**

Positivity of solutions to the Cauchy problem for linear and semilinear biharmonic heat equations

Advances in nonlinear analysis - Berlin: de Gruyter, Bd. 10.2020, 1, S. 353-370;

[Imp.fact.: 2.667]

**Grunau, Hans-Christoph; Romani, Giulio; Sweers, Guido**

Differences between fundamental solutions of general higher order elliptic operators and of products of second order operators

Mathematische Annalen - Berlin: Springer . - 2020;

[Online first]

[Imp.fact.: 1.356]

**Kemm, Friedemann; Gaburro, Elena; Thein, Ferdinand; Dumbser, Michael**

A simple diffuse interface approach for compressible flows around moving solids of arbitrary shape based on a reduced Baer-Nunziato model

Computers & fluids: an international journal - Amsterdam [u.a.]: Elsevier Science, Volume 204 (2020), article 104536;

[Imp.fact.: 2.223]

**Kunik, Matthias**

New insight into results of Ostrowski and Lang on sums of remainders using Farey sequences

Online journal of analytic combinatorics: OJAC - Columbia, Miss.: Univ. of Missouri . - 2020, 15, insges. 11 S.;

**Mehlmann, Carolin; Richter, Thomas**

A goal oriented error estimator and mesh adaptivity for sea ice simulations

Ocean modelling online - Amsterdam [u.a.]: Elsevier Science, Volume 154(2020), article 101684;

[Imp.fact.: 3.215]

**Minakowski, Piotr; Mucha, Piotr B.; Peszek, Jan**

Density-induced consensus protocol

Mathematical models and methods in applied sciences (M 3 AS) - Singapore [u.a.]: World Scientific, Bd. 30.2020, 12, S. 2389-2415;  
[Imp.fact.: 3.044]

**Minakowski, Piotr; Richter, Thomas**

Finite element error estimates on geometrically perturbed domains

Journal of scientific computing - New York, NY [u.a.]: Springer Science + Business Media B.V., 84(2020,2)  
Artikel-Nummer 30, 19 Seiten;  
[Gesehen am 05.10.2020]  
[Imp.fact.: 2.228]

**Simon, Miles**

Some integral curvature estimates for the Ricci flow in four dimensions

Communications in analysis and geometry - Somerville, Mass.: Internat. Press, Bd. 28.2020, 3, S. 707-727;  
[Imp.fact.: 0.694]

**Sonner, Florian; Richter, Thomas**

Second order pressure estimates for the Crank-Nicolson discretization of the incompressible Navier-Stokes Equations

SIAM journal on numerical analysis/ Society for Industrial and Applied Mathematics - Philadelphia, Pa.: SIAM, Bd. 58.2020, 1, S. 375-409, insges. 35 S.;  
[Gesehen am 05.08.2020]

**Warnecke, Gerald**

Ein Brief von C.F. Gauß an C.L. Gerling - kleinste Fehlerquadrate und das Gauß-Seidel-Verfahren  
Mathematische Semesterberichte - Berlin: Springer, Bd. 67.2020, S. 57-84;

**Weinhandl, Roman; Benner, Peter; Richter, Thomas**

Lowrank linear fluidstructure interaction discretizations

ZAMM: journal of applied mathematics and mechanics - Berlin: Wiley-VCH . - 2020;  
[Online first]  
[Imp.fact.: 1.103]

**Weinhandl, Roman; Benner, Peter; Richter, Thomas**

Lowrank linear fluidstructure interaction discretizations

ZAMM: journal of applied mathematics and mechanics - Berlin: Wiley-VCH, Volume 100(2020),issue 1, Artikel e201900205;

**NICHT BEGUTACHTETE ZEITSCHRIFTENAUFsätze**

**Barrett, John W.; Styles, Vanessa; Deckelnick, Klaus**

A practical phase field method for an elliptic surface PDE

Magdeburg: Otto-von-Guericke-Universität, Fakultät für Mathematik, 2020, 24 Seiten - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 03);  
[Literaturangaben: Seite 22-24]

**Benner, Peter; Richter, Thomas; Weinhandl, Roman**

A low-rank approach for nonlinear parameter-dependent fluid-structure interaction problems

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 1911.08193, 7 Seiten, 2019;

**Deckelnick, Klaus; Doemeland, Marco; Grunau, Hans-Christoph**

Boundary value problems for the Helfrich functional for surfaces of revolution - existence and asymptotic behavior

Magdeburg: Universität, Fakultät für Mathematik, 2020, 29 Seiten, Diagramme - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 04);  
[Literaturverzeichnis: Seite 27-29]

**Deckelnick, Klaus; Nürnberg, Robert**

Error analysis for a finite difference scheme for axisymmetric mean curvature flow of genus-0 surfaces  
Magdeburg: Universität, Fakultät für Mathematik, 2020, 24 Seiten - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 06);  
[Literaturverzeichnis: Seite 20-22]

**Kunik, Matthias**

Further results and examples for formal mathematical systems with structural induction  
Magdeburg: Otto-von-Guericke-Universität, Fakultät für Mathematik, 2020, 37 Seiten - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 05)

**Kunik, Matthias; Liu, Hailian; Warnecke, Gerald**

Radially symmetric solutions of the ultra-relativistic Euler equations  
Magdeburg: Otto-von-Guericke-Universität, Fakultät für Mathematik, 2020, 25 Seiten, Illustrationen - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 02);  
[Literaturangaben: Seite 24-25]

**BEGUTACHTETE BUCHBEITRÄGE**

**Brenner, Peter; Werner, Steffen W. R.**

MORLAB - a model order reduction framework in MATLAB and octave  
Mathematical Software - ICMS 2020: 7th International Conference, Braunschweig, Germany, July 13-16, 2020, Proceedings/ International Congress on Mathematical Software - Cham: Springer International Publishing, 2020 . - 2020, S. 432-441 - (Lecture Notes in Computer Science; 12097);

**Gosea, Ion Victor; Duff, Igor Pontes; Benner, Peter; Antoulas, Athanasios C.**

Model order reduction of switched linear systems with constrained switching  
IUTAM Symposium on Model Order Reduction of Coupled Systems, Stuttgart, Germany, May 22-25, 2018: MORCOS 2018 - Cham: Springer, 2020; Fehr, Jörg . - 2020, S. 41-53;  
[Symposium: IUTAM Symposium on Model Order Reduction of Coupled Systems, Stuttgart, Germany, May 22-25, 2018]

**Hantke, Maren; Matern, Christoph; Warnecke, Gerald**

Analytical results for the Riemann problem for a weakly hyperbolic two-phase flow model of a dispersed phase in a carrier fluid  
Continuum mechanics, applied mathematics and scientific computing: Godunov's legacy: a liber amicorum to Professor Godunov - Cham: Springer, 2020; Demidenko, Gennadii V. . - 2020, S. 169-175;

**Hantke, Maren; Thein, Ferdinand**

A numerical method for two phase flows with phase transition including phase creation  
Continuum mechanics, applied mathematics and scientific computing: Godunov's legacy: a liber amicorum to Professor Godunov - Cham: Springer, 2020; Demidenko, Gennadii V. . - 2020, S. 177-183;

**DISSERTATIONEN**

**Mierswa, Alina; Deckelnick, Klaus [AkademischeR BetreuerIn]**

Error estimates for a finite difference approximation of mean curvature flow for surfaces of torus type  
Magdeburg, 2020, 99 Seiten, Illustrationen, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 97-99]

**Mlinari, Petar; Benner, Peter [AkademischeR BetreuerIn]**

Structure-preserving model order reduction for network systems  
Magdeburg, 2020, xxiii, 153 Seiten, Diagramme, 30 cm;  
[Literaturverzeichnis: Seite 141-150]

**Munir, Taj; Warnecke, Gerald [AkademischeR BetreuerIn]**

Analysis of coupling interface problems for bi-domain diffusion equations

Magdeburg, 2020, x, 151 Seiten, Diagramme, 30 cm;

[Literaturverzeichnis: Seite 149-151]

**Weinhandl, Roman; Benner, Peter [AkademischeR BetreuerIn]; Richter, Thomas [AkademischeR BetreuerIn]**

Low-rank methods for parameter-dependent fluid-structure interaction problems

Magdeburg, 2020, xx, 129 Seiten, Formeln;

[Literaturverzeichnis: Seite 121-126]

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## 1. LEITUNG

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## 2. VERÖFFENTLICHUNGEN

### BEGUTACHTETE ZEITSCHRIFTENAUFsätze

#### **Bärmann, Andreas; Gemander, Patrick; Merkert, Maximilian**

The clique problem with multiple-choice constraints under a cycle-free dependency graph  
Discrete applied mathematics - [S.l.]: Elsevier, Bd. 283.2020, S. 59-77;  
[Imp.fact.: 1.041]

#### **Gafarov, Evgeny; Lazarev, Alexander; Werner, Frank**

Minimizing total weighted tardiness for scheduling equal-length jobs on a single machine  
Automation and remote control - Dordrecht [u.a.]: Springer Science + Business Media B.V, Bd. 81.2020, 5, S. 853-868;  
[Imp.fact.: 0.589]

#### **Gunkelmann, Nina; Merkert, Maximilian**

Improved energy minimization of iron-carbon systems - on the influence of positioning interstitial atoms  
Modelling and simulation in materials science and engineering - Bristol: IOP Publ., Volume 28(2020), issue 4, article 045005, 17 Seiten;  
[Imp.fact.: 1.874]

#### **Himmel, Andreas; Sager, Sebastian; Sundmacher, Kai**

Time-minimal set point transition for nonlinear SISO systems under different constraints  
Automatica: a journal of IFAC, the International Federation of Automatic Control - Amsterdam [u.a.]: Elsevier, Pergamon Press, Volume 114 (2020), article 108806;  
[Imp.fact.: 6.355]

#### **Ivanov, Dmitry; Sokolov, Boris; Chen, Weiwei; Dolgui, Alexandre; Werner, Frank; Potryasaev, Semyon**

A control approach to scheduling flexibly configurable jobs with dynamic structural-logical constraints  
IISE Transactions - Abingdon: Taylor & Francis Group . - 2020;  
[Online first]  
[Imp.fact.: 1.417]

#### **Jost, Felix; Schalk, Enrico; Weber, Daniela; Döhner, Hartmut; Fischer, Thomas; Sager, Sebastian**

Model-based optimal AML consolidation treatment  
IEEE transactions on biomedical engineering: a publication of the IEEE Engineering in Medicine and Biology Society/ Institute of Electrical and Electronics Engineers - New York, NY: IEEE, 1964, Bd. 67.2020, 12, S. 3296-3306;  
[Imp.fact.: 4.424]

**Jost, Felix; Zierk, Jakob; Le, Thuy T. T.; Raupach, Thomas; Rauh, Manfred; Suttorp, Meinolf; Stanulla, Martin; Metzler, Markus; Sager, Sebastian**

Model-based simulation of maintenance therapy of childhood acute lymphoblastic leukemia  
Frontiers in physiology - Lausanne: Frontiers Research Foundation, Volume 11(2020), article 217, 13 Seiten;  
[Imp.fact.: 3.367]

**Lazarev, Alexander A.; Lemtyuzhnikova, Darya V.; Werner, Frank**

A metric approach for scheduling problems with minimizing the maximum penalty  
Applied mathematical modelling: simulation and computation for engineering and environmental systems -  
Amsterdam [u.a.]: Elsevier Science . - 2020;  
[Online first]  
[Imp.fact.: 3.633]

**Lazarev, Alexander A.; Pravdivets, Nikolay; Werner, Frank**

On the dual and inverse problems of scheduling jobs to minimize the maximum penalty  
Mathematics: open access journal - Basel: MDPI, Volume 8 (2020), issue 7, article 1131, 15 Seiten;  
[Imp.fact.: 1.747]

**Lilienthal, Patrick; Tetschke, Manuel; Schalk, Enrico; Fischer, Thomas; Sager, Sebastian**

Optimized and personalized phlebotomy schedules for patients suffering from polycythemia vera  
Frontiers in physiology - Lausanne: Frontiers Research Foundation, 2007, Vol. 11 (2020), Article 328, insgesamt  
19 Seiten;  
[Imp.fact.: 3.367]

**Lilienthal, Patrick; Tetschke, Manuel; Schalk, Enrico; Fischer, Thomas; Sager, Sebastian**

Optimized and personalized phlebotomy schedules for patients suffering from polycythemia vera  
Frontiers in physiology - Lausanne: Frontiers Research Foundation, 2007, Vol. 11.2020, Art. 328, insgesamt 19  
Seiten;  
[Imp.fact.: 3.367]

**Robuschi, Nicolò; Zeile, Clemens; Sager, Sebastian; Braghin, Francesco; Cheli, Federico**

Multiphase mixed-integer nonlinear optimal control of hybrid electric vehicles  
Optimization online: an eprint site for the optimization community - Philadelphia, PA . - 2020, insges. 12 S.;

**Scholz, Eberhard; Hartlage, Christa; Bernhardt, Felix; Weber, Tobias; Salatzki, Janek; André, Florian; Lugenbiel, Patrick; Riffel, Johannes; Katus, Hugo; Sager, Sebastian**

Spatial relationship between the pulmonary trunk and the left coronaries - systematic risk assessment based on  
automated three-dimensional distance measurements  
Heart rhythm O2 - [Amsterdam]: Elsevier, Bd. 1.2020, 1, S. 14-20;

**Sharma, Meenarli; Hahn, Mirko; Leyffer, Sven; Ruthotto, Lars; Bloemen Waanders, Bart**

Inversion of convection-diffusion equation with discrete sources  
Optimization and engineering: international multidisciplinary journal to promote optimizational theory &  
applications in engineering science - Dordrecht [u.a.]: Springer Science + Business Media B.V . - 2020, insges.  
39 S. ;  
[Online first]  
[Imp.fact.: 1.829]

**Uebbing, Jennifer; Rihko-Struckmann, Liisa; Sager, Sebastian; Sundmacher, Kai**

CO2 methanation process synthesis by superstructure optimization  
Journal of CO2 utilization - Amsterdam [u.a.]: Elsevier, 20 (2020), Article 101228, insgesamt 15 Seiten;  
[Imp.fact.: 5.993]

**Werner, Frank**

Advances and novel approaches in discrete optimization  
Mathematics: open access journal - Basel: MDPI, Volume 8 (2020), issue 9, article 1426, 4 Seiten;  
[Imp.fact.: 1.747]

**Werner, Frank**

Graph-theoretic problems and their new applications

Mathematics: open access journal - Basel: MDPI, Volume 8 (2020), issue 3, article 445, 4 Seiten;

**Zeile, Clemens; Robuschi, Nicolò; Sager, Sebastian**

Mixed-integer optimal control under minimum dwell time constraints

Mathematical programming: Series A, Series B ; a publication of the Mathematical Programming Society -

Berlin: Springer, 2020, insgesamt 42 Seiten;

[Online first]

[Imp.fact.: 2.823]

**NICHT BEGUTACHTETE ZEITSCHRIFTENAUFsätze**

**Averkov, Gennadiy; Codenotti, Giulia; Macchia, Antonio; Santos, Francisco**

A local maximizer for lattice width of 3-dimensional hollow bodies

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 1907.06199, 22 Seiten;

**Averkov, Gennadiy; Peters, Benjamin; Sage, Sebastian**

Convexification of polynomial optimization problems by means of monomial patterns

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 1901.05675, 36 Seiten;

**Khodabandeh, Pouria; Kayvanfar, Vahid; Rafiee, Majid; Werner, Frank**

A bi-objective home health care routing and scheduling model with considering nurse downgrading costs

Preprints.org - Basel\$: MDPI . - 2020, insges. 18 S.;

**Sager, Sebastian; Zeile, Clemens**

On Mixed-Integer Optimal Control with Constrained Total Variation of the Integer Control

Optimization Online: an eprint site for the optimization community - Mathematical Optimization Society . -

2020, insges. 32 S.;

**BEGUTACHTETE BUCHBEITRäge**

**Ivanov, Dmitry; Sokolov, Boris; Werner, Frank; Dolgui, Alexandre**

Proactive scheduling and reactive real-time control in Industry 4.0

Scheduling in Industry 4.0 and cloud manufacturing - Cham: Springer, 2020; Sokolov, Boris . - 2020, S. 11-37 - (International series in operations research & management science; volume 289);

**Lazarev, Alexander; Lemtyuzhnikova, Darya; Pravdivets, Nikolay; Werner, Frank**

Polynomially solvable subcases for the approximate solution of multi-machine scheduling problems

Advances in optimization and applications: 11th International Conference, OPTIMA 2020, Moscow, Russia, September 28 - October 2, 2020, revised selected papers - Cham: Springer, 2020; Olenov, Nicholas . - 2020, S. 211-223 - (Communications in computer and information science; 1340);

[Konferenz: 11th International Conference, OPTIMA 2020, Moscow, Russia, September 28 - October 2, 2020]

**HERAUSGEBERSCHAFTEN**

**Vakhania, Nodari; Werner, Frank**

Multicriteria Optimization - Pareto-optimal and Related Principles

Zagreb: Intechopen, 2020

**Werner, Frank**

Advances and novel approaches in discrete optimization

MDPI Books, 2020, 354 Seiten;

[This book is a printed edition of the Special Issue Advances and Novel Approaches in Discrete Optimization that was published in Mathematics]

**Werner, Frank**

Graph-theoretic problems and their new applications - special issue editor Frank Werner

Basel: MDPI, 2020, 1 Online-Ressource (294 Seiten);

[This is a reprint of articles from the Special Issue Mathematics ISSN 2227-7390]

**Werner, Frank; Burtseva, Larysa; Sotskov, Yuri N.**

Exact and heuristic scheduling algorithms

Basel: MDPI Books, 2020, 1 Online-Ressource;

[This is a reprint of articles from the Special Issue published online in the open access journal Algorithms (ISSN 1999-4893)]

**NICHT BEGUTACHTETE BUCHBEITRÄGE**

**Vakhania, Nodari; Werner, Frank**

A brief look at multi-criteria problems - multi-threshold optimization versus Pareto-Optimization

Multicriteria Optimization - Pareto-optimal and Related Principles: Pareto-optimal and Related Principles -

Zagreb: Intechopen, 2020 . - 2020, insges. 11 S.

**DISSERTATIONEN**

**Jost, Felix; Sager, Sebastian [AkademischeR BetreuerIn]**

Model-based optimal treatment schedules for acute leukemia

Magdeburg, 2020, x, 170 Seiten, Illustrationen;

[Literaturverzeichnis: Seite 152-170]



# INSTITUT FÜR MATHEMATISCHE STOCHASTIK

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## 1. LEITUNG

Prof. Dr. Alexandra Carpentier - geschäftsführende Leiterin  
Prof. Dr. Anja Janßen (seit 01.09.2020)  
Prof. Dr. Claudia Kirch  
Prof. Dr. Rainer Schwabe (bis 31.03.2020)

Dr. Heiko Großmann  
Priv.-Doz. Dr. Martin Wendler

## 2. VERÖFFENTLICHUNGEN

### BEGUTACHTETE ZEITSCHRIFTENAUFsätze

#### **Braun, Markus; Schneider, Thomas**

Ein generelles Verbot würde dazu führen, dass alle Diesel illegal wären  
Motortechnische Zeitschrift: MTZ ; die technisch-wissenschaftliche Fachzeitschrift für Verbrennungsmotor und Gasturbine - Wiesbaden: Vieweg, Bd. 81.2020, S. 26-29;

#### **Cho, Haeran; Kirch, Claudia**

Discussion of Detecting possibly frequent change-points - wild binary eegmentation 2 and steepest-drop model selection  
Journal of the Korean Statistical Society/ Han'guk-T'onggye-Hakhoe - Singapore: Springer Singapore . - 2020, insges. 5 S.;  
[Online first]  
[Imp.fact.: 0.556]

#### **Christoph, Gerd; Monakhov, M. M.; Ulyanov, V. V.**

Second-order ChebyshevEdgeworth and CornishFisher expansions for distributions of statistics constructed from samples with random sizes  
Journal of mathematical sciences - New York, NY: Consultants Bureau, Bd. 244.2020, 5, S. 811-839;

#### **Christoph, Gerd; Ulyanov, Vladimir V.**

Second order expansions for high-dimension low-sample-size data statistics in random setting  
Mathematics: open access journal - Basel: MDPI, Volume 8 (2020), issue 7, article 1151, 28 Seiten;  
[Imp.fact.: 1.747]

#### **Dehling, H.; Fried, R.; Wendler, Martin**

A robust method for shift detection in time series  
Biometrika: a journal for the statistical study of biological problems - London: Biometrika Trust, Bd. 107.2020, 1, S. 647-660;  
[Imp.fact.: 1.632]

**Eckley, Idris; Kirch, Claudia; Weber, Silke**

A novel change-point approach for the detection of gas emission sources using remotely contained concentration data

The annals of applied statistics: an official journal of the Institute of Mathematical Statistics - Beachwood, Ohio: Inst. of Mathematical Statistics (IMS), Bd. 14.2020, 3, S. 1258-1284;  
[Imp.fact.: 1.675]

**Freise, Fritjof; Holling, Heinz; Schwabe, Rainer**

Optimal designs for two-level main effects models on a restricted design region

Journal of statistical planning and inference - Amsterdam: North-Holland Publ. Co., Bd. 204.2020, S. 45-54;

**Ghoshdastidar, Debarghya; Gutzeit, Maurilio; Carpentier, Alexandra; Luxburg, Ulrike**

Two-sample hypothesis testing for inhomogeneous random graphs

The annals of statistics: an official journal of the Institute of Mathematical Statistics - Hayward, Calif.: IMS Business Off., Bd. 48.2020, 4, S. 2208-2229;

**Graßhoff, Ulrike; Holling, Heinz; Röttger, Frank; Schwabe, Rainer**

Optimality regions for designs in multiple linear regression models with correlated random coefficients

Journal of statistical planning and inference: JSPI - Amsterdam: North-Holland Publ. Co., Bd. 209.2020, S. 267-279;  
[Imp.fact.: 0.756]

**Graßhoff, Ulrike; Holling, Heinz; Schwabe, Rainer**

Doptimal design for the Rasch counts model with multiple binary predictors

The British journal of mathematical and statistical psychology - Hoboken, NJ [u.a.]: Wiley, Bd. 73.2020, 3, S. 541-555;  
[Imp.fact.: 2.388]

**Großmann, Heiko**

On the meaning of block effects in paired comparison choice experiments and a relationship with blocked 2(K) main effects plans

Journal of statistical planning and inference: JSPI - Amsterdam: North-Holland Publ. Co., Bd. 209.2020, S. 76-84;  
[Imp.fact.: 0.756]

**Großmann, Heiko; Weinbauer, Gerhard F.; Baker, Ann; Fuchs, Antje; Luetjens, C. Marc**

Enhanced normograms and pregnancy outcome analysis in nonhuman primate developmental toxicity studies

Reproductive toxicology - Amsterdam [u.a.]: Elsevier Science, Bd. 95.2020, S. 29-36;  
[Imp.fact.: 3.2]

**Guillotini-Plantard, Nadine; Pène, Françoise; Wendler, Martin**

Empirical processes for recurrent and transient random walks in random scenery

Probability and statistics - Les Ulis: EDP Sciences, Bd. 24.2020, S. 127-137;  
[Imp.fact.: 0.766]

**Idais, Osama**

A note on locally optimal designs for generalized linear models with restricted support

Statistics & probability letters - Amsterdam: Elsevier Science, Volume 159(2020), article 108692;

**Idais, Osama**

Locally optimal designs for multivariate generalized linear models

Journal of multivariate analysis: JMVA - Orlando, Fla.: Acad. Press, Volume 180(2020), article 104663;  
[Imp.fact.: 1.029]

**Idais, Osama**

On local optimality of vertex type designs in generalized linear models

Statistical papers - Berlin: Springer . - 2020;

[Online first]  
[Imp.fact.: 1.433]

**Kahle, Thomas; Röttger, Frank; Schwabe, Rainer**

Geometrie optimaler Versuchspläne

Mitteilungen der Deutschen Mathematiker-Vereinigung/ Deutsche Mathematiker-Vereinigung - Berlin: DMV, Bd. 28.2020, 2, S. 71-76;

**Meier, Alexander; Kirch, Claudia; Meyer, Renate**

Bayesian nonparametric analysis of multivariate time series: A matrix Gamma Process approach

Journal of multivariate analysis - Orlando, Fla.: Acad. Press, Volume 175 (2020), article 104560;

[Imp.fact.: 1.029]

**Nyarko, Eric**

Optimal 2 K paired comparison designs for third-order interactions

Statistical papers - Berlin: Springer . - 2020, insges. 16 S.;

[Online first]

[Imp.fact.: 1.345]

**Prus, Maryna; Benda, Norbert; Schwabe, Rainer**

Optimal design in hierarchical random effect models for individual prediction with application in precision medicine

Journal of statistical theory and practice - Cham: Springer International Publishing, Volume 14(2020), issue 2, article 24, 12 Seiten;

**Rakauskas, Alfredas; Wendler, Martin**

Convergence of U-processes in Hölder spaces with application to robust detection of a changed segment

Statistical papers - Berlin: Springer, Bd. 61.2020, 4, S. 1409-1435;

[Imp.fact.: 1.433]

**Rottengruber, Hermann**

Thermofenster lassen sich nicht schließen

Motortechnische Zeitschrift: MTZ - Wiesbaden: Springer Vieweg, Springer-Fachmedien Wiesbaden GmbH, Bd. 81.2020, 10, S. 74

**Schmidt, Marius; Schwabe, Rainer**

Optimal designs for Poisson count data with Gamma block effects

Journal of statistical planning and inference - Amsterdam: North-Holland Publ. Co., Bd. 204.2020, S. 128-140;

[Imp.fact.: 0.756]

**Sharipov, Olimjon Sh.; Wendler, Martin**

Bootstrapping covariance operators of functional time series

Journal of nonparametric statistics - Abingdon: Taylor & Francis . - 2020;

[Online first]

[Imp.fact.: 0.706]

**Sofronov, Georgy; Wendler, Martin; Liebscher, Volkmar**

Editorial for the special issue: Change point detection

Statistical papers - Berlin: Springer, Bd. 61.2020, 4, S. 1347-1349;

[Imp.fact.: 1.433]

**Stoehr, Christina; Aston, John A. D.; Kirch, Claudia**

Detecting changes in the covariance structure of functional time series with application to fMRI data

Econometrics and statistics - Amsterdam [u.a.]: Elsevier B.V . - 2020;

[Online first]

**Wendler, Martin; Wu, Wei Biao**

Central limit theorems for nearly long range dependent subordinated linear processes

Journal of applied probability - Cambridge: Cambridge University Press, Bd. 57.2020, 2, S. 637-656;

[Imp.fact.: 0.577]

## NICHT BEGUTACHTETE ZEITSCHRIFTENAUFsätze

**Cheshire, James; Menard, Pierre; Carpentier, Alexandra**

The influence of shape constraints on the thresholding bandit problem

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2006.10006;

**Christoph, Gerd; Ulyanov, Vladimir V.; Bening, Vladimir E.**

Second order expansions for sample median with random sample size

Magdeburg: Otto-von-Guericke-Universität, Fakultät für Mathematik, 2020, 18 Seiten - (Preprint; Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2020, Nr. 01);

[Literaturangaben: Seite 16-18]

**Freise, Fritjof; Graßhoff, Ulrike; Röttger, Frank; Schwabe, Rainer**

D-optimal designs for Poisson regression with synergetic interaction effect

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2006.04656, insgesamt 21 Seiten;

**Graßhoff, Ulrike; Großmann, Heiko; Holling, Heinz; Schwabe, Rainer**

Optimal design for probit choice models with dependent utilities

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2001.09036, insgesamt 26 Seiten;

**Idais, Osama; Schwabe, Rainer**

In- and equivariance for optimal designs in generalized linear models - the gamma model

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2011.09745, insgesamt 22 Seiten;

**Manegueu, Anne Gael; Vernade, Claire; Carpentier, Alexandra; Valko, Michal**

Stochastic bandits with arm-dependent delays

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2006.10459, insgesamt 19 Seiten;

**Prus, Maryna**

Equivalence theorems for compound design problems with application in mixed models

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2007.14971, 15 Seiten;

**Prus, Maryna; Piepho, Hans-Peter**

Optimizing the allocation of trials to sub-regions in multi-environment crop variety testing

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 2004.05925, 12 Seiten;

**Vernade, Claire; Carpentier, Alexandra; Lattimore, Tor; Zappella, Giovanni; Ermis, Beyza; Brueckner, Michael**

Linear bandits with stochastic delayed feedback

De.arxiv.org - [S.l.]: Arxiv.org, 2020, article 1807.02089;

## BEGUTACHTETE BUCHBEITRÄGE

**Ulyanov, Vladimir V.; Christoph, Gerd**

Short expansions for high-dimension low-sample-size data statistics in random setting

International Conference on Stochastic Methods (ICSM-5): proceedings of the international scientific conference, Russia, Moscow, November 23-27, 2020 - Moscow: Peoples' Friendship University of Russia, 2020; Kozyrev, D. V. . - 2020, S. 214-218;

[Konferenz: 5th International Conference on Stochastic Methods, ICSM-5, Moskau (online), 23.-27. November 2020]

## DISSERTATIONEN

**Röttger, Frank; Kahle, Thomas [AkademischeR BetreuerIn]; Schwabe, Rainer [AkademischeR BetreuerIn]**

Geometry of optimal design and limit theorems

Magdeburg, 2020, IX, 105 Seiten, Diagramme, 30 cm;

[Literaturverzeichnis: Seite 99-105]

**Schmidt, Marius; Schwabe, Rainer [AkademischeR BetreuerIn]**

Optimale Versuchsplanung für Zählraten mit zufälligen Blockeffekten

Magdeburg, 2020, IV, 119 Seiten, Diagramme, 30 cm;

[Literaturverzeichnis: Seite 116-119]