



FAKULTÄT FÜR
MATHEMATIK

Publikationsbericht 2012

FAKULTÄT FÜR MATHEMATIK

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Prof. Dr. rer. nat. habil. Alexander Pott (Dekan ab 01.10.2012)
Prof. Dr. rer. nat. habil. Wolfgang Willems (Dekan bis 30.09.2012)
Prof. Dr. rer. nat. habil. Rainer Schwabe (Prodekan und Studiendekan ab 01.10.2012)
Prof. Dr. rer. nat. habil. Gerald Warnecke (Prodekan bis 30.09.2012)
Prof. Dr. rer. nat. habil. Klaus Deckelnick (Studiendekan bis 30.09.2012)

2. Institute

Institut für Algebra und Geometrie
Institut für Analysis und Numerik
Institut für Mathematische Optimierung
Institut für Mathematische Stochastik

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Prof. Dr. Martin Henk (Institutsleiter)
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Prof. Dr. Alexander Pott
Dr. Gohar Kyureghyan (01.10.2011-30.06.2012 Dr. Wolfram Eid)

2. Hochschullehrer

Prof. Dr. Martin Henk
Prof. Dr. Herbert Henning
Prof. Dr. Benjamin Klopsch (ab 01.10.2012)
PD Dr. Gohar Kyureghyan
Prof. Dr. Wilfried Meidl (bis 31.03.2012)
Prof. Dr. Alexander Pott
Prof. Dr. Wolfgang Willems

3. Veröffentlichungen

Begutachtete Zeitschriftenaufsätze

Aliev, Alexander; Henk, Martin

LLL-reduction for integer knapsacks

In: Journal of combinatorial optimization. - Dordrecht [u.a.]: Springer Science + Business Media B.V, Bd. 24.2012, 4, S. 613-626; ... [weitere Infos](#); 2012

[Imp.fact.: 0,664]

Aliev, Iskander; Fukshansky, Lenny; Henk, Martin

Generalized frobenius numbers - bounds and average behavior

In: Acta arithmetica. - Warszawa: IM PAN, Bd. 155.2012, 1, S. 53-62; ... [weitere Infos](#); 2012

[Imp.fact.: 0,435]

Bouyuklieva, Stefka; Willems, Wolfgang

Connections between different types of binary self-dual codes

In: Algebraic and combinatorial coding theory. - Bulgarian Acad. of Science, S. 111-116, 2012

Kongress: ACCT; 13 (Pomorie): 2012.06.15-21; 2012

Bouyuklieva, Stefka; Willems, Wolfgang

Singly Even Self-Dual Codes With Minimal Shadow

In: IEEE transactions on information theory. - Piscataway, NJ: IEEE, Bd. 58.2012, 6, S. 3856-3860; ... [weitere Infos](#); 2012

[Imp.fact.: 2,728]

Henk, Martin; Hernández Cifre, María A.; Saorín, Eugenia

Steiner polynomials via ultra-logconcave sequences

In: Communications in contemporary mathematics. - Singapore [u.a.]: World Scientific, Bd. 14.2012, 6, insges. 16 S.; ... [weitere Infos](#); 2012

[Imp.fact.: 0,574]

Jedwab, Jonathan; Schmidt, Kai-Uwe

The L 4 norm of Littlewood polynomials derived from the Jacobi symbol

In: Pacific journal of mathematics. - [S.l.], Bd. 257.2012, 2, S. 395-418; ... [weitere Infos](#); 2012

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Kyureghyan, Gohar; Özbudak, Ferruh

Planarity of products of two linearized polynomials

In: Finite fields and their applications. - Orlando, Fla. [u.a.]: Elsevier, Bd. 18.2012, 6, S. 1076-1088; ... [weitere Infos](#); 2012

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Malevich, Anton; Willems, Wolfgang

On the classification of the extremal self-dual codes over small fields with 2-transitive automorphism groups

In: Designs, codes and cryptography. - Dordrecht [u.a.]: Springer Science + Business Media B.V, insges. 8 S., 2012;

... [weitere Infos](#); 2012

[Imp.fact.: 0,875]

Schmidt, Kai-Uwe

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In: IEEE transactions on information theory. - Piscataway, NJ: IEEE, Bd. 58.2012, 4, S. 2512-2515; ... [weitere Infos](#); 2012

[Imp.fact.: 3,009]

Thiel, Carsten

Adelic geometry and polarity

In: Journal of number theory. - Orlando, Fla: Elsevier, Bd. 132.2012, 8, S. 1720-1730; ... [weitere Infos](#); 2012

[Imp.fact.: 0,478]

Buchbeiträge

Cruz, Javier de la; Willems, Wolfgang

5-designs related to binary extremal self-dual codes of length 24m

In: Theory and applications of finite fields. - Providence, RI: American Math. Soc., S. 75-80, 2012

Kongress: International Conference on Finite Fields and Applications; 10 (Ghent, Belgium): 2011.07.11-15; 2012

Kyureghyan, Gohar; Özbudak, Ferruh; Pott, Alexander

Some planar maps and related function fields

In: Arithmetic, geometry, cryptography and coding theory. - Providence, RI: American Math. Soc., 2012 - (Contemporary mathematics; 574); ... [weitere Infos](#)

Kongress: International Conference on Arithmetic, Geometry, Cryptography and Coding Theory; 13 (Marseille, France): 2011.03.14-18; 2012

Kyureghyan, Gohar; Suder, Valentin

On inverses of APN exponents

In: IEEE International Symposium on Information Theory proceedings (ISIT), 2012. - Piscataway, NJ: IEEE, S. 1207-1211;

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Pott, Alexander; Wang, Qi; Zhou, Yue

Sequences and functions derived from projective planes and their difference sets

In: Özbudak, Ferruh.: Arithmetic of Finite Fields. - Berlin, Heidelberg: Springer Berlin Heidelberg, S. 64-80, 2012

- (Lecture notes in computer science; 7369); ... [weitere Infos](#)
Kongress: WAIFI; 4 (Bochum): 2012.07.16-19; 2012

Schmidt, Kai-Uwe

On random binary sequences

In: Hellese, Tor.: Sequences and Their Applications - SETA 2012. - Berlin, Heidelberg: Springer Berlin Heidelberg, S. 303-314 - (Lecture notes in computer science; 7280); ... [weitere Infos](#)
Kongress: SETA; 7 (Waterloo, Canada): 2012.06.04-08; 2012

Lehrbücher

Beier, Erika; Biallas, Ingrid; Eid, Wolfram; Hesse, Birgit; Manzei, Dieter; Matthes, Hans-Jörg; Pruzina, Manfred

Niveaubestimmende Aufgaben für die Sekundarschule Mathematik. - Halle: LISA, 2012, [Online-Ausg.]; Online-Ressource (PDF-Datei, 88 S.); ... [weitere Infos](#); 2012

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Fachlehrplan Sekundarschule Mathematik. - Magdeburg: Kultusministerium, 2012, [Online-Ausg.]; Online-Ressource (PDF-Datei, 57 S.); ... [weitere Infos](#); 2012

Eid, Wolfram; Biallas, Ingrid; Hilmer, Sybille; Liesenberg, Günter; Messner, Ardito; Szebrat, Heike

Mathematik Na klar! - Sekundarschule Sachsen-Anhalt/10. Schuljahr - Arbeitsheft. - Berlin: DUDEN PAETEC, 2012; 56 S. - (Mathematik Na klar! - Sekundarschule Sachsen-Anhalt), ISBN 3835512110; 2012

Eid, Wolfram; Biallas, Ingrid; Hilmer, Sybille; Liesenberg, Günter; Messner, Ardito; Szebrat, Heike

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Abstracts

Eid, Wolfram

Geometric analogies in mathematics lessons

In: Mathematics, Statistics & Mathematical Education abstracts. - Athens: Athens Inst. for Education and Research, S. 30, 2012

Kongress: Annual International Conference on Mathematics, Statistics & Mathematical Education; 6 (Athen, Greece): 2012.06.11-14; 2012

Dissertationen

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Über die Automorphismengruppe extremaler Codes der Längen 96 und 120. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2012; II, 76 Bl.: graph. Darst.; 2012

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Lattice point inequalities and face numbers of polytopes in view of central symmetry. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2012; VII, 106 S.: graph. Darst.; 2012

Malevich, Anton; Willems, Wolfgang [Gutachter]

Extremal self-dual codes. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2012; 88 S.; 2012

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Priv.-Doz. Dr. Bernd Rummler

2. Hochschullehrer

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Priv.-Doz. Dr. Anna Dall'Acqua (ab WiSe 2007 - 30.09.2012)
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Priv.-Doz. Dr. Jörg Wolf (Vertretungsprofessor 1.1.11 - 30.09.12)

3. Veröffentlichungen

Begutachtete Zeitschriftenaufsätze

Achchab, B.; Benjouad, A.; El Fatini, M.; Souissi, A.; Warnecke, Gerald

Robust a posteriori error estimates for subgrid stabilization of non-stationary convection dominated diffusive transport
In: Applied mathematics and computation. - Amsterdam [u.a.]: Elsevier, Bd. 218.2012, 9, S. 5276-5291; ... [weitere Infos](#);
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In: Annals of global analysis and geometry. - Dordrecht [u.a.]: Springer Science + Business Media B.V, insges. 10 S.,
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In: Continuum mechanics and thermodynamics. - Berlin: Springer, insges. 23 S., 2012; ... [weitere Infos](#); 2012
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Ganesan, Sashikumar; Tobiska, Lutz

An operator-splitting finite element method for the efficient parallel solution of multidimensional population balance systems
In: Chemical engineering science. - Amsterdam: Elsevier, Bd. 69.2012, 1, S. 59-68; ... [weitere Infos](#); 2012

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Arbitrary LagrangianEulerian finite-element method for computation of two-phase flows with soluble surfactants
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In: Nonlinear analysis. - Oxford: Pergamon, Elsevier Science, Bd. 75.2012, 4, S. 2199-2208; ... [weitere Infos](#); 2012

Gorenflo, Norbert; Kunik, Matthias

On energy conditions for electromagnetic diffraction by apertures
In: ISRN mathematical physics. - New York, NY: International Scholarly Research Network, insges. 25 S., 2012; ... [weitere Infos](#); 2012

Grunau, Hans-Christoph

The asymptotic shape of a boundary layer of symmetric willmore surfaces of revolution
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Kongress: Conference on Inequalities and Applications; 2 (Hajdúszoboszló, Hungary): 2010.09.; 2012

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Exact Riemann solutions to compressible Euler equations in ducts with discontinuous cross-section
In: Journal of hyperbolic differential equations. - London [u.a.]: World Scientific, Bd. 9.2012, 3, S. 403-449; ... [weitere Infos](#); 2012
[Imp.fact.: 0,796]

He, Lianhua; Tobiska, Lutz

The two-level local projection stabilization as an enriched one-level approach
In: Advances in computational mathematics. - Bussum: Baltzer Science Publ, Bd. 36.2012, 4, S. 503-523; ... [weitere Infos](#); 2012

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Parametric study of thermal effects in reactive liquid chromatography
In: Chemical engineering journal. - Amsterdam: Elsevier, Bd. 191.2012, S. 426-440; ... [weitere Infos](#); 2012
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Juhnke, Dominique; Tobiska, Lutz

A local projection type stabilization with exponential enrichments applied to one-dimensional advectiondiffusion equations
In: Computer methods in applied mechanics and engineering. - Amsterdam [u.a.]: Elsevier, Bd. 201/204.2012, S. 179-190; ... [weitere Infos](#); 2012
[Imp.fact.: 2,085]

Kavaliou, Klim; Tobiska, Lutz

A finite element method for a noncoercive elliptic problem with Neumann boundary conditions

In: Computational methods in applied mathematics. - Berlin: De Gruyter, Bd. 12.2012, 2, S. 168-183; ... [weitere Infos](#); 2012

Klaus Deckelnick; Michael Hinze

A note on the approximation of elliptic control problems with bang-bang controls

In: Computational optimization and applications. - Norvell, Mass. : Springer, Bd. 51.2012, 2, S. 931-939; ... [weitere Infos](#); 2012

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Numerical reduction of a crystallizer model with internal and external coordinates by proper orthogonal decomposition

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Kumar, Rajesh; Kumar, Jitendra; Warnecke, Gerald

Moment preserving finite volume schemes for solving population balance equations incorporating aggregation, breakage, growth and source terms

In: Mathematical models and methods in applied sciences (M 3 AS). - Singapore [u.a.]: World Scientific, 2012; ... [weitere Infos](#); 2012

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Kunik, Matthias; Lucht, Lutz G.

Power series with the von Mangoldt function

In: Functiones et approximatio. - Pozna , Bd. 47.2012, 1, S. 15-33; ... [weitere Infos](#); 2012

Matthies, Gunar; Tobiska, Lutz

A two-level local projection stabilisation on uniformly refined triangular meshes

In: Numerical algorithms. - Bussum: Baltzer, Bd. 61.2012, 3, S. 465-478; ... [weitere Infos](#); 2012

[Imp.fact.: 1,042]

Nagaiah, Ch.; Rüdiger, S.; Warnecke, Gerald; Falcke, M.

Adaptive space and time numerical simulation of reaction-diffusion models for intracellular calcium dynamics

In: Applied mathematics and computation. - Amsterdam [u.a.]: Elsevier, Bd. 218.2012, 20, S. 10194-10210;

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[Imp.fact.: 1,536]

Wheeler, Glen

Surface diffusion flow near spheres

In: Calculus of variations and partial differential equations. - Berlin: Springer, insges. 21 S., 2012; ... [weitere Infos](#); 2012

[Imp.fact.: 1,156]

Herausgeberschaften

Bertram, Albrecht; Tomas, Jürgen; Warnecke, Gerald; Altenbach, Holm; Tsotsas, Evangelos; Schmidt, Jürgen; Specht, Ekehard; Tobiska, Lutz; Naumenko, Konstantin

Micro-macro-interactions in structured media and particle systems - GRK 1554 - Berlin Summer School 2012, 04.06.2012 - 08.06.2012; Summer School Proceedings, August 2012. - Magdeburg: Univ., 2012; XIII, 285 S.

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Artikel in Kongressbänden

Gröpler, Robin; Warnecke, Gerald; Do, Duc Hai; Specht, Ekehard

Simulation of lime calcination in normal shaft kilns - influence of the particle size distribution

In: Micro-macro-interactions in structured media and particle systems. - Magdeburg: Univ., S. 244-251, 2012

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Han, Ee; Warnecke, Gerald

On the exact Riemann solutions to shallow water equations

In: Micro-macro-interactions in structured media and particle systems. - Magdeburg: Univ., S. 93-100, 2012

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Held, Kristin; Tobiska, Lutz

Discretisation of coupled partial differential equations for surfactant influenced interfaces

In: Micro-macro-interactions in structured media and particle systems. - Magdeburg: Univ., S. 69-75, 2012

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Kavaliou, Klim; Tobiska, Lutz

Diffusion of magnetic particles in a ferrofluid in the presence of magnetic and velocity fields

In: Micro-macro-interactions in structured media and particle systems. - Magdeburg: Univ., S. 62-68, 2012

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Ssemaganda, Vincent; Warnecke, Gerald

Metastable solutions for a thermodynamically consistent Becker-Döring model

In: Micro-macro-interactions in structured media and particle systems. - Magdeburg: Univ., S. 101-108, 2012

Kongress: Berlin Summer School; (Berlin): 2012.06.04-06; 2012

Abstracts

Ganesan, Sashikumar; Hahn, Andreas; Held, Kristin; Tobiska, Lutz

An accurate numerical method for computation of two-phase flows with surfactants

In: Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012), September 10-14, 2012, Vienna, Austria.. - Vienna, insges. 1 S.; 2012

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apl. Prof. Dr. rer. nat. habil. Frank Werner

3. Veröffentlichungen

Begutachtete Zeitschriftenaufsätze

Averkov, Gennadiy

On finitely generated closures in the theory of cutting planes
In: Discrete optimization. - New York, NY [u.a.]: Elsevier, Bd. 9.2012, 4, S. 209-215; ... [weitere Infos](#); 2012
[Imp.fact.: 0,500]

Averkov, Gennadiy

On the size of lattice simplices with a single interior lattice point
In: SIAM journal on discrete mathematics. - Philadelphia, Pa: Soc, Bd. 26.2012, 2, S. 515-526; ... [weitere Infos](#); 2012
[Imp.fact.: 0,648]

Averkov, Gennadiy; Bröckner, Ludwig

Minimal polynomial descriptions of polyhedra and special semialgebraic sets
In: Advances in geometry. - Berlin [u.a.]: de Gruyter, Bd. 12.2012, 3, S. 447-459; ... [weitere Infos](#); 2012
[Imp.fact.: 0,338]

Averkov, Gennadiy; Langfeld, Barbara

On the Reconstruction of Planar Lattice-Convex Sets from the Covariogram
In: Discrete & computational geometry. - New York, NY: Springer, Bd. 48.2012, 1, S. 216-238; ... [weitere Infos](#); 2012
[Imp.fact.: 0,938]

Averkov, Gennadiy; Wagner, Christian

Inequalities for the lattice width of lattice-free convex sets in the plane

In: Beiträge zur Algebra und Geometrie. - Berlin: Springer, Bd. 53.2012, 1, S. 1-23; ... [weitere Infos](#); 2012

Averkov, Gennadiy; Weismantel, R.

Transversal numbers over subsets of linear spaces

In: Advances in geometry. - Berlin [u.a.]: de Gruyter, Bd. 12.2012, 1, S. 19-28; ... [weitere Infos](#); 2012

[Imp.fact.: 0,338]

Gafarov, Evgeny; Lazarev, Alexander; Werner, Frank

A note on a single machine scheduling problem with generalized total tardiness objective function

In: Information processing letters. - Amsterdam [u.a.]: Elsevier, Bd. 112.2011, 3, S. 72-76, 2012; ... [weitere Infos](#); 2012

[Imp.fact.: 0,612]

Janiak, Adam; Janiak, Wladyslaw; Kovalyov, Mikhail Y.; Werner, Frank

Soft due window assignment and scheduling of unit-time jobs on parallel machines

In: 4OR. - Berlin: Springer, Bd. 10.2012, 4, S. 347-360; ... [weitere Infos](#); 2012

[Imp.fact.: 0,323]

Kähne, Thilo; Kolodziej, Angela; Smalla, Karl-Heinz; Eisenschmidt, Elke; Haus, Utz-Uwe; Weismantel, Robert; Kropf, Siegfried; Wetzel, Wolfram; Ohi, Frank W.; Tischmeyer, Wolfgang; Naumann, Michael; Gundelfinger, Eckart D.

Synaptic proteome changes in mouse brain regions upon auditory discrimination learning

In: Proteomics. - Weinheim: Wiley-Blackwell, Bd. 12.2012, 15/16, S. 2433-2444; ... [weitere Infos](#); 2012

[Imp.fact.: 4,505]

Kaibel, Volker; Pashkovich, Kanstantsin; Theis, Dirk Oliver

Symmetry matters for sizes of extended formulations

In: SIAM journal on discrete mathematics. - Philadelphia, Pa: Soc, Bd. 26.2012, 3, S. 1361-1382; ... [weitere Infos](#); 2012

[Imp.fact.: 0,648]

Kravchenko, Svetlana A.; Werner, Frank

Minimizing total tardiness on parallel machines with preemptions

In: Journal of scheduling. - Norwell, Mass.: Springer Science + Business Media, Bd. 15.2012, 2, S. 193-200; 2012

[Imp.fact.: 1,297]

Pielot, Rainer; Smalla, Karl-Heinz; Müller, Anke; Landgraf, Peter; Lehmann, Anne-Christin; Eisenschmidt, Elke; Haus, Utz-Uwe; Weismantel, Robert; Gundelfinger, Eckart D.; Dieterich, Daniela C.

SynProt: a database for proteins of detergent-resistant synaptic protein preparations

In: Frontiers in synaptic neuroscience. - Lausanne: Frontiers Research Foundation, Bd. 4.2012, insges. 13 S.; 2012

Sager, Sebastian; Bock, Hans Georg; Diehl, Moritz

The integer approximation error in mixed-integer optimal control

In: Mathematical programming. - Berlin: Springer, Bd. 133.2012, 1/2, S. 1-23; ... [weitere Infos](#); 2012

[Imp.fact.: 1,707]

Nicht begutachtete Zeitschriftenaufsätze

Gafarov, Evgeny R.; Dolgui, Alexandre; Lazarev, Alexander A.; Werner, Frank

A graphical approach to solve an investment optimization problem

In: Magdeburg: Univ., Fak. für Mathematik, 2012; 27 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2012,15); 2012

Buchbeiträge

Baptiste, Philippe; Kovalyov, Mikhail Y.; Orlovich, Yuri; Werner, Frank; Zverovich, Igor

Graphs with maximal induced matchings of the same size

In: 14th IFAC Symposium on Information Control Problems in Manufacturing, INCOM'12. - IFAC-PapersOnline, S. 518-523, 2012; ... [weitere Infos](#)

Kongress: INCOM; 14 (Bucharest, Romania): 2012.05.23-25; 2012

Carballo, Lester; Lazarev, Alexander; Vakhania, Nodari; Werner, Frank

Search on an enumeration tree in multiprocessor job-shop problem

In: 14th IFAC Symposium on Information Control Problems in Manufacturing, INCOM'12. - IFAC-PapersOnline, S. 381-386, 2012; ... [weitere Infos](#)

Kongress: INCOM; 14 (Bucharest, Romania): 2012.05.23-25; 2012

Gafarov, Evgeny R.; Lazarev, Alexander; Werner, Frank

A graphical approach to solve combinatorial problems - algorithms and some computational results

In: 14th IFAC Symposium on Information Control Problems in Manufacturing, INCOM'12. - IFAC-PapersOnline, 2012; ... [weitere Infos](#)

Kongress: INCOM; 14 (Bucharest, Romania): 2012.05.23-25; 2012

Gholami, Omid; Sotskov, Yuri; Werner, Frank

Job-shop problems with objectives appropriate for train scheduling in a single-track railway

In: Proceedings of the 2nd International Conference on Simulation and Modeling Methodologies, Technologies and Applications. - [S.I.]: SciTePress, S. 425-430, 2012

Kongress: SIMULTECH; 2 (Rome): 2012.07.28-31; 2012

Kravchenko, Svetlana; Werner, Frank

Minimizing a regular function on uniform machines with ordered completion times

In: Linear programming. - New York: Nova Science Publ., S. 159-172, 2012; 2012

Sotskov, Yuri; Gholami, Omid; Werner, Frank

Heuristic algorithms for a job-shop problem with minimizing total job tardiness

In: III. International Conference on Optimization Methods and Applications, (OPTIMA-2012). - Moscow, S. 245-249

Kongress: OPTIMA-2012; 3 (Costa da Caparica, Portugal): 2012.09.23-30; 2012

Sotskov, Yuri; Werner, Frank; Zatsiupa, Aksana

Calculation of the stability radius of an optimal line balance

In: 14th IFAC Symposium on Information Control Problems in Manufacturing, INCOM'12. - IFAC-PapersOnline, S. 192-197, 2012; ... [weitere Infos](#)

Kongress: INCOM; 14 (Bucharest, Romania): 2012.05.23-25; 2012

Vakhania, Nodari; Werner, Frank

Near to optimal size selection in combinatorial circuits

In: 14th IFAC Symposium on Information Control Problems in Manufacturing, INCOM'12. - IFAC-PapersOnline, S. 524-529, 2012; ... [weitere Infos](#)

Kongress: INCOM; 14 (Bucharest, Romania): 2012.05.23-25; 2012

Werner, Frank

Scheduling under uncertainty

In: PMS 2012. - Leuven, S. 67-70

Kongress: PMS 2012; 13 (Leuven, Belgium): 2012.04.01-04; 2012

Werner, Frank; Vakhania, Nodari

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