

INSTITUT FÜR ANALYSIS UND NUMERIK

Universitätsplatz 2, 39106 Magdeburg
Tel. +49 (0)391 67 18649 / 18586 / 18700, Fax +49 (0)391 67 18073
ian@uni-magdeburg.de

1. Leitung

Prof. Dr. Klaus Deckelnick
Prof. Dr. Hans-Christoph Grunau
Prof. Dr. Miles Simon
Prof. Dr. Lutz Tobiska (Geschäftsführender Leiter)
Prof. Dr. Gerald Warnecke
Priv.-Doz. Dr. Bernd Rummeler

2. Veröffentlichungen

Begutachtete Zeitschriftenaufsätze

Abdelrahman, Mahmoud; Kunik, Matthias

The interaction of waves for the ultra-relativistic Euler equations
In: Journal of mathematical analysis and applications. - Amsterdam [u.a.]: Elsevier, insges. 24 S., 2013;
[Imp.fact.: 1,050]

Dall'Acqua, Anna; Deckelnick, Klaus; Wheeler, Glen

Unstable Willmore surfaces of revolution subject to natural boundary conditions
In: Calculus of variations and partial differential equations. - Berlin: Springer, Bd. 48.2013, 3/4, S. 293-313;
[Imp.fact.: 1,236]

Dreyer, Wolfgang; Hantke, Maren; Warnecke, Gerald

Bubbles in liquids with phase transition. Part 2: On balance laws for mixture theories of disperse vapor bubbles in liquid with phase change
In: Continuum mechanics and thermodynamics. - Berlin: Springer, insges. 29 S., 2013;
[Imp.fact.: 1,091]

Han, Ee; Hantke, Maren; Warnecke, Gerald

Criteria for nonuniqueness of Riemann solutions to compressible duct flows
In: ZAMM. - Berlin: Wiley-VCH, 2013;
[Imp.fact.: 0,863]

Hantke, Maren; Dreyer, Wolfgang; Warnecke, Gerald

Exact solutions to the Riemann problem for compressible isothermal Euler equations for two-phase flows with and without phase transition
In: Quarterly of applied mathematics. - Providence, RI: Brown Univ, Bd. 71.2013, S. 509-540;

Javeed, Shumalia; Qamar, Shamsul; Ashraf, Waqas; Warnecke, Gerald; Seidel-Morgenstern, Andreas

Analysis and numerical investigation of two dynamic models for liquid chromatography
In: Chemical engineering science. - Amsterdam [u.a.]: Elsevier Science, Bd. 90.2013, S. 17-31;
[Imp.fact.: 2,601]

John, Volker; Thein, Ferdinan

On the efficiency and robustness of the core routine of the quadrature method of moments (QMOM)
In: Chemical engineering science. - Amsterdam [u.a.]: Elsevier Science, Bd. 75.2013, S. 327-333;
[Imp.fact.: 2,386]

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, Bd. 23.2013, 7;
[Imp.fact.: 1,635]

Kuzmin, Dmitri; Schieweck, Friedhelm

A parameter-free smoothness indicator for high-resolution finite element schemes
In: Central European journal of mathematics. - Berlin: Springer, Bd. 11.2013, 8, S. 1478-1488;

Nagaiah, Ch.; Suresh Kumar, N.; Bück, Andreas; Warnecke, Gerald

Parallel and high resolution numerical solution of concentration and temperature distributions in fluidized beds
In: Computers & chemical engineering. - Amsterdam [u.a.]: Elsevier Science, Bd. 52.2013, S. 122-133;
[Imp.fact.: 2,320]

Okiro, Jared; Manyonge, A. W.; Ongati, N. O.; Shichikha, J. M.; Kimaiyo, J. K.

On the solution of confined aquifer flow equations - finite difference approximations
In: Applied mathematical sciences. - Ruse: Hikari Ltd., Bd. 7.2013, 58, S. 2885-2896;

Schulze, Felix; Simon, Miles

Expanding solitons with non-negative curvature operator coming out of cones
In: Mathematische Zeitschrift. - Berlin: Springer, Bd. 275.2013, 1/2, S. 625-639;
[Imp.fact.: 0,879]

Simon, Miles

Local smoothing results for the Ricci flow in dimensions two and three
In: Geometry & topology. - Berkeley, Calif: Mathematical Sciences Publishers, Bd. 17.2013, S. 2263-2287;

Zien, Ali; Hantke, Maren; Warnecke, Gerald

On the modeling and simulation of a laser-induced cavitation bubble
In: International journal for numerical methods in fluids. - Chichester: Wiley, Bd. 73.2013, 2, S. 172-203;

Nicht begutachtete Zeitschriftenaufsätze

Abdelrahman, Mahmoud A. E.; Kunik, Matthias

A new front tracking scheme for the ultra-relativistic Euler equations
In: Magdeburg: Univ., Fak. für Mathematik, 2013; 27 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,18);

Abdelrahman, Mahmoud A. E.; Kunik, Matthias

The interaction of waves for the ultra-relativistic Euler equations /Mahmoud A. E. Abdelrahman; Matthias Kunik
In: Magdeburg: Univ., Fak. für Mathematik, 2013; 27 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,7);

Bannasch, Sebastian; Rose, Gerd; Warnecke, Gerald

Iterative solution of system matrices from computer tomography using discrete time flow methods
In: Magdeburg: Univ., Fak. für Mathematik, 2013; 12 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,11);

Deckelnick, Klaus; Elliott, Charles M.; Ranner, Thomas

Unfitted finite element methods using bulk meshes for surface partial differential equations

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 26 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,29);

Deckelnick, Klaus; Katz, Jakob; Schieweck, Friedhelm

A C1-finite element method for the Willmore flow of two-dimensional graphs

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 23 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,4);

Hinze, Michael; Deckelnick, Klaus

A-priori error bounds for finite element approximation of elliptic optimal control problems with gradient constraints

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 15 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,14);

Lenor, Stephan; Grunau, Hans-Christoph

Uniform estimates and convexity in capillary surfaces

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 13 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,19);

Sweers, Guido; Grunau, Hans-Christoph

A clamped plate with a uniform weight may change sign

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 6 S.: III. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,10);

Sweers, Guido; Grunau, Hans-Christoph

In any dimension a "clamped plate" with a uniform weight may change sign*

In: Magdeburg: Univ., Fak. für Mathematik, 2013; 8 S. - (Preprint / Fakultät für Mathematik, Otto-von-Guericke-Universität Magdeburg; 2013,17);

Buchbeiträge

Grunau, Hans-Christoph; Robert, Frédéric

Uniform estimates for polyharmonic Green functions in domains with small holes

In: Recent trends in nonlinear partial differential equations II. - Providence, Rhode Island: American Mathematical Society, S. 263-272, 2013;

Dissertationen

Abdelrahman, Mahmoud Abdelaziz Elbiomy; Kunik, Matthias [Gutachter]

Analytical and numerical investigation of the ultra-relativistic Euler equations. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2013; VI, 176 S.: graph. Darst.;

Breiten, Tobias; Benner, Peter [Gutachter]

Interpolatory methods for model reduction of large-scale dynamical systems. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2013, 2012; XX, 179 S.: graph. Darst.;

Cueto Camejo, Carlos; Warnecke, Gerald [Gutachter]

The singular coagulation and coagulation-fragmentation equations. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2013; VI, 115 S.: graph. Darst.;

Han, Ee; Warnecke, Gerald [Gutachter]

Exact Riemann solutions to two selected resonant hyperbolic systems. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2013, 2012; VI, 162 S.: graph. Darst.;

Javeed, Shumaila; Warnecke, Gerald [Gutachter]

Analysis and numerical investigation of dynamic models for liquid chromatography. - Magdeburg, Univ., Fak. für Mathematik, Diss., 2013, 2012; XV, 138 S.: graph. Darst.;