

Prof. Dr.-Ing. Rainer Helmig

Doctorates: Co-supervisor / Member of Examination Committee

- 1) Reinhard Hinkelmann (1997) Uni Hannover: Parallelisierung eines Euler-Lagrange Verfahrens für Strömungs- und Stofftransportprozesse in Oberflächengewässern (31.01.1997)
- 2) Martin Emmert (1997) Uni Stuttgart: Numerische Modellierung nichtisothermer Gas-Wasser Systeme in porösen Medien (08.04.1997)
- 3) Arne Färber (1997) Uni Stuttgart: Wärmetransport in der ungesättigten Bodenzone: Entwicklung einer thermischen In-Situ-Sanierungstechnologie (22.07.1997)
- 4) Olaf Cirpka (1997) Uni Stuttgart: Numerische Methoden zur Simulation des reaktiven Mehrkomponenten-transports im Grundwasser (22.07.1997)
- 5) Daniel Flensberg (1998) Uni Bochum: Numerische Behandlung der Zweiphasenströmung im konvektionsdominanten und stark nichtlinearen Fall
- 6) Jacek Jankowski (1998) Uni Hannover: A non-hydrostatic model for free surface flows
- 7) Stefan Weihrauch (1998) TU Braunschweig: Optimierung der hydraulischen Sanierung von Grundwasserkontaminationen mit chlorierten Kohlenwasserstoffen durch temporär erhöhte hydraulische Gradienten
- 8) Gabriel Ndikumana (1999) TU Braunschweig: Numerische Modellierung der Wirkung von longitudinalen Totzonen auf die Stoffausbreitung in renaturierten Fließgewässern
- 9) Britta Rosen (1999) Ruhr-Universität Bochum: Numerische Modellierung der Wechselwirkung zwischen gesättigt-ungesättigter Grundwasserströmung und Verformung im geklüfteten Gestein
- 10) Alexander Fuchs (1999) Uni Stuttgart: Optimierte Delaunay-Triangulierungen zur Vernetzung getrimmter NURBS-Körper
- 11) Jörg Middendorf (2000) TU Chemnitz: Zur Beschreibung des kapillaren Flüssigkeitstransportes in Papier (14.07.2000)
- 12) Holger Schüttrumpf (2000) TU Braunschweig: Hydrodynamische Belastung der Binnenböschung von Seedeichen durch Wellenüberlauf (05.02.2001)
- 13) Janine Edelhoff-Dauben (2001) TU Claustal-Zellerfeld: Sicherung von Gasaustritten an der Erdoberfläche in Abhängigkeit unterschiedlicher Deckgebirgsmächtigkeiten (30.01.2001)
- 14) Jan Wienke (2001) TU Braunschweig: Druckschlagbelastung von Zylindern durch brechende Wellen -theoretische und großmaßstäbliche Untersuchungen (17.07.2001)
- 15) Dharumarajen Nayagum (2001) Universite Louis Pasteur de Strasbourg: Simulation Numérique de la Pollution du Sous-Sol par les Produits Petroliers Derives: Application au Cas d'un Ecoulement Diphasique Monodimensionnel

- 16) Jens Hanel (2001) TU Braunschweig: Modell zur Analyse von gekoppelten Transport- und Stoffabbau-prozessen in Deponien (23.11.2001)
- 17) Martin Bernreuther (2002) Uni Stuttgart: Geometrische Modellierung mit Simplicialkomplexen - Vom CAD-Modell zur numerischen Analyse (18.07.2002)
- 18) Alexandre Nekrassov (2002) TU Bergakademie Freiberg: Development of a reservoir simulation tool with the local equilibrium approach to composite water-hydrocarbon systems for application to multiphase flow in petroleum reservoirs and in aquifers taking into account the hydrodynamic dispersion (12.07.2002)
- 19) Hocine Benremita (2002) Uni Strasbourg: Approche Expérimentale et Simulation Numérique du Transfert de Solvants Chlorés en Aquifère Alluvial Contrôlé (09.09.2002)
- 20) Sven Crone (2002) Uni Dortmund: Nicht-isotherme mehrphasige Mehrkomponentenströmungen mit Phasenwechsel in porösen Medien (02.09.2002)
- 21) Angela Winkler (2002) Uni Stuttgart: Prozesse des Wärme- und Schadstofftransports bei der In-Situ-Sanierung mit festen Wärmequellen (15.10.2002)
- 22) Jochen Appt (2003) Uni Stuttgart: Analysis of wind-induced basin-scale internal waves of stratified Upper Lake Constance by the combined use of measurements and a three-dimensional numerical model (23.07.2003)
- 23) Gerhard Haimerl (2004) TU München: Groundwater recharge in wadi channels downstream of dams – efficiency and management strategies (02.02.2004)
- 24) Vincent Lagendijk (2004) RWTH Aachen: Stofftransportvorgänge in Festgesteinsaquiferen: Analyse von Tracerdurchbruchkurven zur Identifikation eines geeigneten Mehrkontinuum-Ansatzes (30.01.2004)
- 25) Jan Martin Nordbotten (2004) Universität Bergen, Norwegen: Sequestration of carbon in saline aquifers – mathematical and numerical analysis (30.04.2004)
- 26) Martin Spiller (2004) RWTH Aachen: Physical and numerical experiments of flow and transport in heterogeneous fractured media: single fracture flow at high Reynolds numbers, and reactive particle transport (Modélisation physique et numérique d'écoulements et transports en milieux hétérogènes fractures: Ecoulement à haut Reynolds et transport particulaire réactif) (25.10.2004)
- 27) Julia Weilbeer (2004) Uni Hannover: Modellierung des Partikeltransports in Nachklärbecken als Mehr-phasenströmung (12.11.2004)
- 28) Thomas Vogel (2005) RWTH Aachen: Characterization and sensitivity analysis of tracer breakthrough curves with respect to multi-continuum modeling (Charakterisierung und Sensitivitätsanalyse von Tracerdurchbruchkurven im Hinblick auf die Mehrkontinuum-Modellierung (14.01.2005)
- 29) Ralf Wege (2005) Uni Stuttgart: Untersuchungs- und Überwachungsmethoden zur Beurteilung des Natural-Attenuation-Potentials von gaswerkstypischen Schadensfällen (19.05.2005)
- 30) Arndt Marzilger (2005) RWTH Aachen: Das Ausgangsverhalten von Steinkohlenbergwerken unmittelbar nach Stilllegung am Beispiel des Bergwerks Westfalen (15.06.2005)

- 31) Anke Jannie Landmann (2005) Uni Delft: Fundamental mechanisms underlying high-density transport in porous media (28.06.2005)
- 32) Stefan Rief (2005) Uni Kaiserslautern: Nonlinear flow in porous media – numerical solution of the Navier-Stokes system with two pressures and application to paper making (15.09.2005)
- 33) Klaas Heinrich (2006) Uni Karlsruhe: Hydraulisch kontrollierte Wasser-Alkohol-Zirkulation zur gezielten in-situ CKW-Sanierung (19.07.2006)
- 34) Jostein Natvig (2006) Uni Oslo: Fast-marching methods for porous media flow and numerical methods for conservation laws (10.10.2006)
- 35) Willem-Jan Plug (2007) TU Delft: Measurements of capillary pressure and electric permittivity of gas-water systems in porous media at elevated pressures: Application to geological storage of CO₂ in aquifers and wetting behaviour in coal (16.10.2007)
- 36) Steffen Herrmann (2007) Uni Stuttgart: Simulationsmodell zum Wasserabfluss von Fahrbahnoberflächen (25.10.2007)
- 37) Markus Brenk (2007) Uni Stuttgart: Algorithmische Aspekte der Fluid-Struktur-Wechselwirkung auf kartesischen Gittern (17.12.2007)
- 38) Tobias Graf (2008) Uni Stuttgart: Multiphase flow processes in deformable porous media under consideration of fluid phase transitions (12.06.2008)
- 39) Giorgio Amisora Onnis (2008) ETH Zürich: Interpreting multiple environmental tracer data with a groundwater model in a perialpine catchment (19.09.2008)
- 40) Ayhan Acartürk (2009) Uni Stuttgart: Simulation of charged hydrated porous materials (27.03.2009)
- 41) Randi Holm (2009) Uni Bergen: Modelling of three-phase flow functions for applications in enhanced oil recovery (22.05.2009)
- 42) Benjamin Ahrenholz (2009) TU Braunschweig: Massively parallel simulations of multiphase and multicomponent flows using lattice Boltzmann methods (17.08.2009)
- 43) Yvonne Lins (2009) Uni Bochum: Hydro-mechanical properties of partially saturated sand (07.09.2009)
- 44) Sreejith Kuttanikkad (2009) Uni Heidelberg: Pore-scale direct numerical simulation of flow and transport in porous media (15.10.2009)
- 45) Simona Bottero (2009) Uni Utrecht: Advances in the theory of capillarity in porous media (09.11.2009)
- 46) Raphael di Chiara Roupert (2009) Uni Strasbourg: Développement d'un code de calcul multiphasique multiconstituants (08.12.2009)
- 47) Milos Vasin (2009) Uni Stuttgart: Influence of soil structure on the flow in the unsaturated zone (11.12.2009)
- 48) Vahid Joekar-Niasar (2010) Uni Utrecht: The Immiscibles. Capillarity effects in porous media: pore-network modeling (29.03.2010)

- 49) Yufei Cao (2010) Uni Stuttgart: Robust numerical algorithms based on corrected operator splitting for two-phase flow in porous media (08.06.2010)
- 50) Sonja Bente (2010) TU Braunschweig: Interaction of degradation, deformation and transport processes in municipal solid waste landfills (27.10.2010)
- 51) Ebrahim Shahræeni (2010) ETH Zürich: Thermo-evaporative fluxes from porous media from pore to continuum scale (29.11.2010)
- 52) Isabel Ostermann (2011) TU Kaiserslautern: Modeling heat transport in deep geothermal systems by radial basis functions (13.05.2011)
- 53) Johannes Reichold (2011) ETH Zürich: Cerebral blood flow modeling in realistic cortical microvascular networks (26.07.2011)
- 54) Hadi Hajibeygi (2011) ETH Zürich: Iterative multiscale finite volume method for multiphase flow in porous media with complex physics (26.07.2011)
- 55) Anna Kuhlmann (2011) Uni Stuttgart: Influence of non-Gaussian soil structure and root water uptake on flow in the unsaturated zone (14.11.2011)
Hauptberichter: Prof. I. Neuweiler (Uni Hannover)
- 56) Chaozhong Qin (2012) Uni Utrecht: Modeling two-phase flow and transport in polymer electrolyte membrane fuel cell: Linking simulations in resolved porous microstructures with a macroscopic fuel cell model (04.06.2012)
- 57) Irina Komarova (2012) Uni Stuttgart: Carbon-dioxide storage in the subsurface: a fully coupled analysis of transport phenomena and solid deformation (16.07.2012)
- 58) Anne Wolff (2012) Uni Stuttgart: Numerical simulation of surface runoff on pavements with irregular topography by means of the shallow water equation (10.08.2012)
- 59) Kenneth Mark Walton (2013) Uni Waterloo: On modeling three-phase flow in discretely fractured rock (26.02.2013)
- 60) Frederike Kissling (2013) Uni Stuttgart: Analysis and numerics for nonclassical wave fronts in porous media (05.03.2013)
- 61) Mohammed Ghesmoune (2013) Uni Lorraine: Advancement of the negative saturations method for multi-phase multi-components flow with gravity and diffusion (02.04.2013)
- 62) Lena Walter (2013) Uni Stuttgart: Uncertainty studies and risk assessment for CO₂ storage in geological formations (04.07.2013)
- 63) Felix Heimann (2013) Uni Heidelberg: An unfitted higher-order discontinuous Galerkin method for incompressible two-phase flow with moving contact lines (15.07.2013)
- 64) Philipp Leube (2013) Uni Stuttgart: Methods for physically-based model reduction in time: analysis, comparison of methods and application (24.10.2013)
- 65) Muhammad Imran (2013) Uni Utrecht: An experimental study of thermal and thermohaline convection in saturated porous media (25.10.2013)
- 66) Rainer Enzenhöfer (2013) Uni Stuttgart: Quantification and management of risks in water production and supply systems (17.12.2013)

- 67) Daniel Erdal (2014) Uni Hannover: Bias correction as a means to compensate for unresolved subsurface structure in modeling of flow in the unsaturated zone (14.02.2014)
- 68) Bruno Arbter (2014) Uni Stuttgart: Numerische Bestimmung der akustischen Eigenschaften offenporiger Fahrbahnbeläge auf der Basis ihrer rekonstruierten Geometrie (08.04.2014)
- 69) Barbara Mayer (2014) Uni Stuttgart: Investigation of pressure loss and heat transfer in a regular metallic porous structure (18.06.2014)
- 70) Nicolas Schwenck (2015) Uni Stuttgart: An XFEM approach for the simulation of fractured porous-media systems (10.02.2015)
- 71) Jan Philip Busch (2015) Uni Potsdam: Investigations on mobility of carbon colloid supported nanoscale zero-valent iron (nZVI) for groundwater remediation (28.04.2015)
- 72) Leopold Stadler (2015) TU Berlin: Entwicklung von Modellkonzepten für die Simulation von Zweiphasenströmungen in makroporösen Böden (04.05.2015)
- 73) Tobias Köppl (2015) TU München: Multi-scale modeling of flow and transport processes in arterial networks and tissue (08.06.2015)
- 74) Erfan Haghghi (2015) ETH Zürich: Evaporation from porous surfaces into turbulent airflows: from pores to eddies (07.07.2015)
- 75) Johannes Hommel (2016) Uni Stuttgart: Modeling biogeochemical and mass transport processes in the subsurface: investigation of microbially induced calcite precipitation (15.02.2016)
- 76) Xiulei Cao (2016) TU Eindhoven: Mathematical and numerical analysis for non equilibrium two phase flow models in porous media (22.03.2016)
- 77) Tao Zhu (2016) TU München: Unsteady porous-media flows (15.04.2016)
- 78) Andrew Fraser Harris (2016) University of Edinburgh: Development of a new non-linear elastic hydro-mechanical model for the simulation of compacted MX-80 bentonite: application to laboratory and in situ sealing experiments for geo-repository engineered barriers (04.05.2016)
- 79) Milad Aminzadeh (2016) ETH Zürich: Energy partitioning dynamics of evaporative porous surfaces – from pores to landscape scale (09.06.2016)
- 80) Linwei Hu (2016) ETH Zürich: Characterization of CO₂ plumes in deep saline formations using fluid pressure (15.08.2016)
- 81) Michael Sinsbeck (2016) Uni Stuttgart: An integrative approach for conditioning, robust design and control in the subsurface (06.09.2016)
- 82) Raheel Ahmed (2016) Swansea University: Finite-volume CVD-MPFA methods for fluid flow simulations in fractured porous media (07.09.2016)
- 83) Alexander Kissinger (2016) Uni Stuttgart: Regional scale site screening and investigation of possible impacts of deep subsurface utilization on hydrosystems – an assessment of relevant physical processes and suitable modeling approaches and methods (17.10.2016)

- 84) Mehdi Musivand Arzanfudi (2016) TU Delft: Computational modeling of multiphysics multidomain multiphase flow in fracturing porous media: Leakage hazards in CO₂ geosequestration (04.11.2016)
- 85) Franz Lindner (2016) Universität der Bundeswehr München: Untersuchungen zur mehrphasigen Strömung und Verdampfung in porösen Medien (08.11.2016)
- 86) Oliver Meister (2016) TU München: Sierpinski curves for parallel adaptive mesh refinement in finite element and finite volume methods (02.12.2016)
- 87) Abraham Isaac Martinez Noguez (2017) TU Berlin: Impacts of fast water infiltration and extraction on subsurface structures with fault zones (07.02.2017)
- 88) Luwen Zhuang (2017) Uni Utrecht: Advanced theories of water redistribution and infiltration in porous media: experimental studies and monitoring (28.02.2017)
- 89) Stefan Karpinski (2017) Uni Hasselt: Numerical analysis of an interior penalty discontinuous Galerkin scheme for two phase flow in heterogeneous porous media with discontinuous dynamic capillary pressure effects (11.05.2017)
- 90) Christoph Grüninger (2017) Uni Stuttgart: Numerical coupling of Navier-Stokes and Darcy flow for soil-water evaporation (18.05.2017)
- 91) Kai Häberle (2017) Uni Stuttgart: Fluid-phase transitions in a multiphase model of CO₂ sequestration into deep aquifers: a fully coupled analysis of transport phenomena and solid deformation (26.07.2017)
- 92) Kristina Rasmusson (2017) Uni Uppsala: Modeling of geohydrological processes in CO₂ storage – with focus on residual trapping (29.09.2017)
- 93) Xiaoguang Yin (2018) Uni Utrecht: Pore-scale mechanisms of two-phase flow in porous materials: Volume-of-Fluid method and pore-network modelling (23.02.2018)
- 94) Emna Mejri (2018) Uni Tunis: Modeling and analyses of salt precipitation on evaporation processes in the unsaturated zone (30.04.2018)
- 95) Markus Köppel (2018) Uni Stuttgart: Flow in heterogeneous porous media: fractures and uncertainty quantification (31.07.2018)
- 96) Anuradha Ashok Bhatia (2018) Uni Stuttgart: Moisture sorption in porous media: experimental and numerical enquiries applicable to the automotive passenger compartment (06.09.2018)
- 97) Martin Beck (2018) Uni Stuttgart: Volume-based conceptual approaches for the analysis of coupled hydraulic and geomechanical processes (15.11.2018)
- 98) Arthur Moncorgé (2018) ETH Zürich: Sequential fully implicit methods for multiscale modeling of compositional flows (19.11.2018)
- 99) Ioannis Zarikos (2018) Uni Utrecht: ~ Pore-scale experimental studies of two-phase flow in porous media: focus on discontinuous non-wetting phase (07.12.2018)
- 100) Laurence Beaude (2018) Uni Côte d'Azur: Simulation numérique d'écoulements diphasiques compositionnels thermique en milieux poreux et ses applications à la géothermie haute énergie (10.12.2018)

- 101) Georg Futter (2019) Uni Stuttgart: Physical modeling of PEMFC performance and chemical membrane degradation (08.01.2019)
- 102) Matteo Cusini (2019) TU Delft: Dynamic multilevel methods for simulation of multiphase flow in heterogeneous porous media (15.02.2019)
- 103) Elmar Sauer (2019) Uni Stuttgart: A new dispersion contribution based on the PCP-SAFT equation of state in the framework of classical density functional theory (27.03.2019)
- 104) Mark Khait (2019) TU Delft: Delft Advanced Research Terra Simulator: general purpose reservoir simulator with operator-based linearization (10.12.2019)
- 105) Ludovica Delpopolo Carciopolo (2020) Politecnico di Milano: Conservative multirate schemes for flow in heterogeneous porous media
- 106) Timo Koch (2020) Uni Stuttgart: Mixed-dimension embedded models for flow and transport processes in porous media with embedded tubular network systems (19.02.2020)
- 107) Dennis Gläser (2020) Uni Stuttgart: Discrete fracture modeling of multi-phase flow and deformation in fractured poroelastic media (23.03.2020)
- 108) Omar Godinez Brizuela (2020) Uni Manchester: Multiscale modelling of fundamentals of reactive transport for enhanced oil recovery applications (06.04.2020)
- 109) Gilian Schout (2020) Uni Utrecht: Origin, fate, and detection of methane leaking from the deep subsurface into groundwater and soil (10.07.2020)
- 110) Maria Camila Osorno Tejada (2020) Uni Stuttgart: Multiscale Modelling of Hydro-mechanical Coupling in Porous Media (10.09.2020).
- 111) Magnus Aashammer Gjennestad (2020): Uni Trondheim: Modelling of two-phase equilibrium, stability and steady-state flow in porous media (24.11.2020)
- 112) Tabea Broecker (2020) TU Berlin: High-resolution integral modelling approach for flow and transport in groundwater – surface water interaction space
- 113) Gabriele Seitz (2021) Uni Stuttgart: Modelling of methane and hydrogen storage in porous-media systems: a contribution to the efficient handling of renewable energy sources (24.02.2021)
- 114) Robert Haide (2021) University of Bergamo: Characterization of Multi-Phase Fluid Displacement in Porous Media during Drying by means of X-Ray Micro Computed Tomography
- 115) Virgile Dubos (2021) Sorbonne Université: Méthodes numériques autour d'écoulements en eaux peu profondes: effets dispersifs, force de Coriolis (14.12.2021)
- 116) Moein Jahanbani Veshareh (2021) Technical University of Denmark: Numerical simulation of reservoir souring in chalk reservoirs (08.10.2021)
- 117) Si Suo (2021) University of Sydney: Modelling multiphase flow in heterogeneous porous media
- 118) Philipp Selzer (2022) Uni Tübingen: Flux Postprocessing and Semi-Analytical Particle Tracking for Finite-Element-Type Models of Variably Saturated Flow in Porous Media (30.05.2022)

- 119) Elisa Bergkamp (2022) TU Eindhoven: Computational modeling of skin and slip effects in fractured porous media (28.06.2022)
- 120) Powei Huang (2022) ETH Zürich: Reactive transport modeling at the pore scale and upscaling to the Darcy scale (16.09.2022)
- 121) Michael Tobias Rauter (2022) NTNU Trondheim: Fluid transport through nano-porous media in the presence of phase transitions (05.10.2022)