Research outputs:

Model-based interpretation of tracer tests in fractured limestone and clayey till
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2019

Coexistence of two distinct Sulfurospirillum populations respiring tetrachloroethene - genomic and kinetic considerations
Research output: Research - peer-review › Journal article – Annual report year: 2018

Coulombic effects during conservative and reactive transport of charged solutes in homogeneous and heterogeneous porous media: Experiments and modeling
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Diffusive isotope fractionation of deuterated benzene and toluene in aqueous systems
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Effect of anisotropy structure on plume dilution and reaction enhancement in helical flows
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Effect of Anisotropy Structure on Plume Entropy and Reactive Mixing in Helical Flows
Research output: Research - peer-review › Journal article – Annual report year: 2018

Hydrogeochemical and multi-tracer investigations of arsenic-affected aquifers in semi-arid West Africa
Research output: Research - peer-review › Journal article – Annual report year: 2018

Imaging the spatial distribution of geochemical heterogeneities in porous media: multidimensional flow-through experiments and inverse modeling
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Imaging the spatial distribution of geochemical heterogeneities with inverse reactive transport modeling: The example of pyrite oxidation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Impact of surface complexation and electrostatic interactions during pH fronts propagation in silica porous media: Experiments and model-based interpretation
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Longitudinal dispersion coefficients for numerical modeling of groundwater solute transport in heterogeneous formations
Research output: Research - peer-review › Journal article – Annual report year: 2018
Model-based interpretation of tracer tests in fractured limestone and clayey till
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Modelling approach and benchmark experiments for Nernst-Plack-based transport, Coulombic interactions and geochemical reactions in saturated porous media
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Nernst-Planck Based Description of Transport, Coulombic Interactions and Geochemical Reactions in Porous Media: Modeling Approach and Benchmark Experiments
Research output: Research - peer-review › Journal article – Annual report year: 2018

Reactive fronts in chemically heterogeneous porous media: Experimental and modeling investigation of pyrite oxidation
Research output: Research - peer-review › Journal article – Annual report year: 2018

Simulation of dual carbon–bromine stable isotope fractionation during 1,2-dibromoethane degradation
Research output: Research - peer-review › Journal article – Annual report year: 2018

Surface complexation modeling of arsenic mobilization from goethite: Interpretation of in-situ experiments in a sedimentary basin of Inner Mongolia, China
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Towards imaging the spatial distribution of geochemical heterogeneities and arsenic sources
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Coulombic interactions during advection-dominated transport of ions in porous media
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Effect of electrostatic interactions on pH fronts propagation in saturated in saturated porous media
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Entropy-based critical reaction time for mixing-controlled reactive transport
Research output: Research - peer-review › Journal article – Annual report year: 2017

Experimental determination of isotope enrichment factors – bias from mass removal by repetitive sampling
Research output: Research - peer-review › Journal article – Annual report year: 2016

Experimental investigation of concentration and stable isotopes signals during organic contaminants back diffusion
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Experimental investigation of the impact of compound-specific dispersion and electrostatic interactions on transient transport and solute breakthrough
Research output: Research - peer-review › Journal article – Annual report year: 2017

Impact of compound-specific mixing and electrostatic interactions on transient transport and solute breakthrough
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Investigation of mixing enhancement in porous media under helical flow conditions: 3-D bench-scale experiments
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Modeling multicomponent ionic dispersion, electrochemical migration, and chemical reactions in porous media with IPhreeqc coupling
Normal and Inverse Diffusive Isotope Fractionation of Deuterated Toluene and Benzene in Aqueous Systems
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2017

Organohalide-respiring bacteria community competition dynamics: Experiments and model-based interpretations
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2017

The impact of mass transfer limitations and heterogeneity contrasts on the parameterization of longitudinal dispersion in numerical models
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2017

Bringing modelling to life: current research in an introductory MSc modelling course
Research output: Research » Conference abstract for conference – Annual report year: 2016

Diffusion, Coulombic interactions and multicomponent ionic transport of charged species in saturated porous media
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Diffusive-dispersive mass transfer in the capillary fringe: Impact of water table fluctuations and heterogeneities
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Experimental investigation of transverse mixing in porous media under helical flow conditions
Research output: Research - peer-review » Journal article – Annual report year: 2016

How can we make Fickian dispersion models useful in practice?
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Imaging geochemical heterogeneities using inverse reactive transport modeling: An example relevant for characterizing arsenic mobilization and distribution
Research output: Research - peer-review » Journal article – Annual report year: 2016

Impact of multicomponent ionic transport on pH fronts propagation in saturated porous media
Research output: Research - peer-review » Conference abstract in journal – Annual report year: 2016

Joint interpretation of enantiomer and stable isotope fractionation for chiral pesticides degradation
Research output: Research - peer-review » Journal article – Annual report year: 2016

Model-based integration of enantiomer and stable isotope fractionation for chiral pesticides degradation
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Modeling multicomponent ionic transport in groundwater with IPhreeqc coupling: Electrostatic interactions and geochemical reactions in homogeneous and heterogeneous domains
Research output: Research - peer-review » Journal article – Annual report year: 2016

Modeling position-specific isotope fractionation of organic micropollutants degradation via different reaction pathways
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Multicomponent ionic transport and pH fronts propagation
Research output: Research - peer-review » Conference abstract for conference – Annual report year: 2016

Position-specific isotope modeling of organic micropollutants transformations through different reaction pathways
Research output: Research - peer-review » Conference abstract in journal – Annual report year: 2016
Position-specific isotope modeling of organic micropollutants transformation through different reaction pathways
Research output: Research - peer-review › Journal article – Annual report year: 2016

Benchmarks for multicomponent diffusion and electrochemical migration
Research output: Research - peer-review › Journal article – Annual report year: 2015

Coulombic interactions and multicomponent ionic dispersion during transport of charged species in heterogeneous porous media
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Diffusive–Dispersive and Reactive Fronts in Porous Media: Iron(II) Oxidation at the Unsaturated–Saturated Interface
Research output: Research - peer-review › Journal article – Annual report year: 2015

Enhancement of plume dilution in two-dimensional and three-dimensional porous media by flow focusing in high-permeability inclusions
Research output: Research - peer-review › Journal article – Annual report year: 2015

Experimental Evidence of Helical Flow in Porous Media
Research output: Research - peer-review › Journal article – Annual report year: 2015

Experimental investigation of compound-specific dilution of solute plumes in saturated porous media: 2-D vs. 3-D flow-through systems
Research output: Research - peer-review › Journal article – Annual report year: 2014

Helical flow in three-dimensional nonstationary anisotropic heterogeneous porous media
Research output: Research - peer-review › Journal article – Annual report year: 2015

Impact of Heterogeneity on Oxygen Transfer in a Fluctuating Capillary Fringe
Research output: Research - peer-review › Journal article – Annual report year: 2015

Impact of multicomponent ionic transport on pH fronts propagation in saturated porous media
Research output: Research - peer-review › Journal article – Annual report year: 2015

Modeling Multi-Element Isotope Fractionation during Biodegradation of Organic Micropollutants
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

On the importance of aqueous diffusion and electrostatic interactions in advection-dominated transport in saturated porous media
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Pore-scale analysis on the effects of compound-specific dilution on transient transport and solute breakthrough
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Transverse mixing in three-dimensional nonstationary anisotropic heterogeneous porous media
Research output: Research - peer-review › Journal article – Annual report year: 2015

Diffusive Fractionation of BTEX and Chlorinated Ethenes in Aqueous Solution: Quantification of Spatial Isotope Gradients
Research output: Research - peer-review › Journal article – Annual report year: 2014

Effects of compound-specific dilution on transient transport and solute breakthrough: A pore-scale analysis
Research output: Research - peer-review › Journal article – Annual report year: 2014
Experimental Sensitivity Analysis of Oxygen Transfer in the Capillary Fringe
Research output: Research - peer-review › Journal article – Annual report year: 2014

Helicity and flow topology in three-dimensional anisotropic porous media
Research output: Research - peer-review › Journal article – Annual report year: 2014

Mechanistic approach to multi-element isotope modeling of organic contaminant degradation
Research output: Research - peer-review › Journal article – Annual report year: 2014

Multicomponent ionic dispersion during transport of electrolytes in heterogeneous porous media: Experiments and model-based interpretation
Research output: Research - peer-review › Journal article – Annual report year: 2014

Coulombic effects in advection-dominated transport of electrolytes in porous media: Multicomponent ionic dispersion
Research output: Research - peer-review › Journal article – Annual report year: 2013

Effects of compound-specific transverse mixing on steady-state reactive plumes: Insights from pore-scale simulations and Darcy-scale experiments
Research output: Research - peer-review › Journal article – Annual report year: 2013

Integrated carbon and chlorine isotope modeling: Applications to chlorinated aliphatic hydrocarbons dechlorination
Research output: Research - peer-review › Journal article – Annual report year: 2013

On the importance of diffusion and compound-specific mixing for groundwater transport: An investigation from pore to field scale
Research output: Research - peer-review › Journal article – Annual report year: 2013

Experimental Investigation and Pore-Scale Modeling Interpretation of Compound-Specific Transverse Dispersion in Porous Media
Research output: Research - peer-review › Journal article – Annual report year: 2012

Mixing, entropy and reactive solute transport
Research output: Research - peer-review › Journal article – Annual report year: 2012

Numerical simulation of isotope fractionation in steady-state bioreactive transport controlled by transverse mixing
Research output: Research - peer-review › Journal article – Annual report year: 2012

Oxygen Transfer in a Fluctuating Capillary Fringe
Research output: Research - peer-review › Journal article – Annual report year: 2012

Stochastic evaluation of mixing-controlled steady-state plume lengths in two-dimensional heterogeneous domains
Research output: Research - peer-review › Journal article – Annual report year: 2012

Transverse Hydrodynamic Dispersion Effects on Isotope Signals in Groundwater Chlorinated Solvents' Plumes
Research output: Research - peer-review › Journal article – Annual report year: 2012

A high-resolution non-invasive approach to quantify oxygen transport across the capillary fringe and within the underlying groundwater
Research output: Research - peer-review › Journal article – Annual report year: 2011
Chlorine Isotope Analysis of Organic Contaminants Using GC-qMS: Method Optimization and Comparison of Different Evaluation Schemes
Research output: Research - peer-review › Journal article – Annual report year: 2011

Contaminant Fate and Reactive Transport in Groundwater
Research output: Research - peer-review › Book chapter – Annual report year: 2011

Influence of Natural Organic Matter on As Transport and Retention
Research output: Research - peer-review › Journal article – Annual report year: 2011

Relevance of local compound-specific transverse dispersion for conservative and reactive mixing in heterogeneous porous media
Research output: Research - peer-review › Journal article – Annual report year: 2011

Stochastic flux-related analysis of transverse mixing in two-dimensional heterogeneous porous media
Research output: Research - peer-review › Journal article – Annual report year: 2011

Transverse mixing of conservative and reactive tracers in porous media: Quantification through the concepts of flux-related and critical dilution indices
Research output: Research - peer-review › Journal article – Annual report year: 2011

Evidence of Compound-Dependent Hydrodynamic and Mechanical Transverse Dispersion by Multitracer Laboratory Experiments
Research output: Research - peer-review › Journal article – Annual report year: 2010

Isotopic Fractionation by Transverse Dispersion: Flow-through Microcosms and Reactive Transport Modeling Study
Research output: Research - peer-review › Journal article – Annual report year: 2010

PHT3D: A Reactive Multicomponent Transport Model for Saturated Porous Media
Research output: Research - peer-review › Journal article – Annual report year: 2010

Biogeochemical and isotopic gradients in a BTEX/PAH contaminant plume: Model-based interpretation of a high-resolution field data set
Research output: Research - peer-review › Journal article – Annual report year: 2009

CCD camera image analysis for mapping solute concentrations in saturated porous media
Research output: Research - peer-review › Journal article – Annual report year: 2009

Enhanced biodegradation by hydraulic heterogeneities in petroleum hydrocarbon plumes
Research output: Research - peer-review › Journal article – Annual report year: 2009

Enhancement of dilution and transverse reactive mixing in porous media: Experiments and model-based interpretation
Research output: Research - peer-review › Journal article – Annual report year: 2009

Two-dimensional flow-through microcosms - Versatile test systems to study biodegradation processes in porous aquifers
Research output: Research - peer-review › Journal article – Annual report year: 2009

A kinetic approach for simulating redox-controlled fringe and core biodegradation processes in groundwater: model development and application to a landfill site in Piedmont, Italy
Research output: Research - peer-review › Journal article – Annual report year: 2008

Projects:
Electrokinetic Techniques in Subsurface Applications  
Project: PhD

Exchange of gases and volatile compounds between groundwater and air  
Project: PhD

Microbial community evolution models for describing the degradation of chlorinated solvents  
Project: PhD

Functionality increase in MBBRs due to metabolic expansion vs community expansion  
Project: PhD

Origin and sustainable use of fresh groundwater in Western Zambia  
Project: PhD

Mechanisms of release and transport of arsenic in groundwater of semi-arid basins in China  
Project: PhD

Activities:

Model-based interpretation of tracer tests in fractured limestone and clayey till  
Activity: Talks and presentations › Conference presentations

Organohalide-respiring bacteria community competition dynamics: Experiments and model-based interpretations  
Activity: Talks and presentations › Conference presentations

The 9th IAHS Conference on Groundwater Quality  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

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