


2nd TERENO-OZCAR Conference

25 – 28 SEPTEMBER 2023, BONN

Programme

TERENO
OZCAR
International Conference
25-28 Sept 2023, Bonn


JÜLICH
Forschungszentrum


cnrs


GFZ
Helmholtz-Zentrum
POTSDAM


AllEnvi
Alliance nationale de recherche
pour l'Environnement


UFZ
HELMHOLTZ
Zentrum für Umweltforschung


KIT
Karlsruher Institut für Technologie


DLR
Deutsches Zentrum
für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft


MINISTÈRE
DE L'ENSEIGNEMENT
SUPÉRIEUR
ET DE LA RECHERCHE
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Welcome

Dear attendees of the second TERENO-OZCAR Conference,

In October 2021, we organized the first joint meeting of OZCAR, the French research infrastructure on "Observatoires de la Zone Critique" and TERENO, "Terrestrial Environmental Observatories" in Straßbourg, France. It was the first meeting of this kind in Europe aiming at bringing together scientists active in terrestrial system's research. This meeting was extremely well received as the place to be where critical zone research in Europe meets. This research is gaining momentum as the impacts of climate change on the land surface and the critical zone become more and more visible impacting our daily life as drought, heat waves and floods are occurring more frequently than in the past.

Following up on this success, we decided to organize our second international joint meeting in Bonn, the former capital of the Federal Republic of Germany. Bonn is also easily accessible by train. We offer a vibrant program of research and observational activities that are at the core of TERENO and OZCAR and research conducted in terrestrial systems. The meeting consists of 10 sessions covering a wide range of topics related to observing and sensing the various compartments of the land surface and the critical zone, model-data integration, fundamental hydrological and biogeochemical processes, biodiversity and water quality management.

We hope that this conference will stimulate further research in terrestrial systems' and critical zone research and open up new collaborations amongst scientists and stakeholders interested in the future development and management of terrestrial systems and its critical zone.

Sincerely,

Harry Vereecken
TERENO Coordinator

Jérôme Gaillardet and Isabelle Braud
OZCAR Coordinators

Topics

1. **Innovative sensing and analysis methods for environmental research**
2. **Long-term environmental observation for understanding the Earth system in the Anthropocene**
3. **Remote sensing for improved analysis of soil-vegetation-atmosphere dynamics at the regional scale**
4. **Measuring and modelling water storage dynamics** (formerly 5.)
5. **Biogeochemical processes at the soil and catchment scale** (merged session, formerly 6.)

   (+ 4. Temporal variability of Critical Zone processes using high-resolution bio- and geoarchives

   + 11. Mountain ecosystems in a changing world

   + 13. Mineral/biota interactions, rates and geomorphological processes in the formation of the critical zone)
6. **Novel methods for the integration and exploration of environmental data** (formerly 7.)
7. **Extremes and the critical zone: Water and matter transport during floods and droughts, intermittent streams and processes at the groundwater-surface water interface** (merged session)

   (8. Extreme events in the critical zone: Water and matter transport

   + 9. Intermittent streams and processes at the groundwater - surface water interface)
8. **Water and biogeochemical cycles in Earth system models** (formerly 10.)
9. **Model data fusion: Improving model prediction and process understanding** (formerly 12.)
10. **Challenges in understanding Critical Zone processes in Africa** (formerly 14.)

Programme

MONDAY, 25 SEPTEMBER 2023

07:30	Bus transfer for the excursion in front of the Gustav-Stresemann-Institut
07:30 – 17:00	**Excursion "TERENO test site Wüstebach" and "Rurtalsperre Schwammenauel"**
17:00 – 18:00	Lobby of the Gustav-Stresemann-Institut **Registration**
18:00 – 19:00	Römer Keller (Ground floor) **Special Event and Apero "Franco-German research and scientific cooperations"**
19:00	Römer Keller (Ground floor) **Conference Reception**

TUESDAY, 26 SEPTEMBER 2023

08:00 – 09:00	Foyer of the plenary hall **Registration**
09:00 – 10:30	**Plenary hall**
09:00 – 09:30	**Welcome**
09:30 – 10:00	**Keynote: Enhancing monitoring and modelling of water storage dynamics** Dörthe Tetzlaff – Humboldt Universität zu Berlin
10:00 – 10:30	**Keynote: The complementary power of extensive environmental monitoring programs and intensively instrumented observatories for supporting the "green transition" to Agenda 2030** Kevin Bishop – Swedish University of Agricultural Sciences (SLU), Uppsala
10:30 – 11:00	**Coffee break**
11:00 – 12:00	**Plenary hall**
11:00 – 11:30	**Keynote: Building upon multiple-scale observatories to delineate the sources and mechanisms of CO2 emissions from lakes** Marie-Elodie Perga – University Lausanne
11:30 – 12:00	**Keynote: Electrical resistivity applications for supporting precision agriculture: a promising approach also for environmental monitoring?** Daniela Vanella – Università degli Studi di Catania
12:00 – 13:00	**Lunch, Restaurant**

TUESDAY, 26 SEPTEMBER 2023

13:00 – 14:30, Plenary hall

Session: **Innovative sensing and analysis methods for environmental research**

Convener:
Daniel Rasche, GFZ, Potsdam,
Ulrike Werban, UFZ, Leipzig
Laurent Longuevergne, Geosciences, Rennes
Nolwenn Lesparre, ITES, Strasbourg

15 min talk and 3 min discussion

Assessing the accuracy of root-zone soil moisture prediction from gamma radiation monitoring data
Sonia Akter[1]; Johan Alexander Huisman; Heye Bogena
[1] Forschungszentrum Jülich GmbH

Water dynamics in dry soils – using relative humidity sensors to measure water vapor adsorption in desert soils
Nurit Agam[1]; Dilia Kool
[1] Ben-Gurion University of the Negev

Spatiotemporal soil moisture monitoring with cosmic rays in TERENO, Central Germany
Martin Schrön[1]; Daniel Altdorff; Sascha Oswald; Sabine Attinger; Peter Dietrich; Steffen Zacharias
[1] UFZ - Helmholtz Centre for Environmental Research GmbH

Self-referenced Cosmic Rays Neutron Sensing probes based on contextual muons detection
Luca Stevanato[1]; Enrico Gazzola; Luca Morselli; Barbara Biasuzzi; Marcello Lunardon
[1]Finapp srl

Optimal Temporal Filtering of the Cosmic-Ray Neutron Signal to Reduce Soil Moisture Uncertainty
Patrick Davies[1]; Roland Baatz; Heye Bogena; Emmanuel Quansah; Leonard Kofitse Amekudzi
[1] Kwame Nkrumah University of Science and Technology (KNUST)

Improving the depth-to-bedrock maps for groundwater-to-atmosphere modeling in Africa
Francis E. Oussou[1]
[1] Federal University of Technology Akure

13:00 – 14:30, Room S6

Session: **Measuring and modelling water storage dynamics**

Convener:
Camille Bouchez, Géosciences, Rennes
Jean Marçais, RiverLy, Lyon
Theresa Blume, GFZ, Potsdam

12 min talk and 3 min discussion

Sandy soil compaction and influence to hydrologic balance: insight from 1D soil water flow modeling of experimental setups
Jayson Gabriel Pinza[1]; Jan Staes ; Jan Vanderborght; Sarah Garré
[1] University of Antwerp

Improving the internal hydrological consistency of a process-based solute transport model by simultaneous calibration of stream concentration and water flow
Jordy Salmon-Monviola[1]; Ophélie Fovet; Markus Hrachowitz
[1] INRAE - Institut Agro, UMR SAS

Integrated and ecohydrological modeling of the water cycle in three contrasting long term observatories (OZCAR network, France)
Julien Ackerer[1]; Sylvain Kuppel; Isabelle Braud; Sandrine Anquetin; Sylvain Pasquet; Ophélie Fovet; Laurent Ruiz; Christophe Flechard; Anne Probst; Jean Luc Probst; Tiphaine Tallec; Marie Claire Pierret; Nolwenn Lesparre; Sylvain Weill; Jean Marcais; Agnes Riviere; Florence Habets; Jérôme Gaillardet
[1] IGE grenoble & OZCAR RI

Modeling global warming impacts on Rain/snow partitioning, water path, and residence time in a mid-elevation mountain catchment
Aniket Gupta; Alix Reverdy; Jean-Martial Cohard[1]; Didier Voisin; Basile Hector; Marc Descloitres; Jean-pPerre Vandervaere; Catherine Coulaud; Romain Biron; Lucie Liger; Jean-Gabriel Valay; Reed Maxwell
[1] University of Grenoble Alpes

Hydrological regime of Sahelian small water bodies from combined Sentinel-2 MSI and Sentinel-3 SRAL data
Mathilde de FLEURY; Laurent Kergoat; Roland Yonaba; Tazen Fowé; Manuela Grippa[1]
[1] Géosciences Environnement Toulouse (GET), UMR 5563, Université Toulouse 3, CNRS, IRD)

Assessing the impact of irrigation on water storage dynamics in a Mediterranean catchment using land surface modelling
Olga Dombrowski[1]; Cosimo Brogi; Harrie-Jan Hendricks-Franssen; Vassilios Pisinaras; Andreas Panagopoulos; Anna Chatzi; Konstantinos Babakos; Sean Swenson; Heye Bogena
[1] Forschungszentrum Jülich GmbH

What happens to rainfall in urban areas? Dual monitoring and modelling approach in a small urban catchment in Nantes, France
Fabrice Rodriguez[1]; Herve Andrieu, Bernard Flahaut, Pascal Keravec, Patrice Mestayer, Marie-Laure Mosini, Laetitia Pineau, Jean Michel Rosant
[1] Campus Nantes - Univ Gustave Eiffel

14:30 – 15:00 **Coffee break**

TUESDAY, 26 SEPTEMBER 2023

15:00 – 16:30, Plenary hall

Session: **Innovative sensing and analysis methods for environmental research**

Convener:
Daniel Rasche, GFZ, Potsdam,
Ulrike Werban, UFZ, Leipzig
Laurent Longuevergne, Geosciences, Rennes
Nolwenn Lesparre, ITES, Strasbourg

12 min talk and 3 min discussion

Plant functional type-specific and temporally resolved evapotranspiration partitioning using water stable isotopologues
Daniel Schulz[1]; Nicolas Brüggemann; Youri Rothfuss
[1] Forschungszentrum Jülich GmbH

Airborne eddy covariance for estimating regional turbulent matter and energy fluxes in NE Germany
Inge Wiekenkamp[1]; Jürgen Fischer; Lehmann; Stefan Metzger; Thomas Ruhtz; Christian Wille; Mathias Zöllner; Torsten Sachs
[1] GFZ German Center for Geosciences

Mapping Critical Zone biomass and surface roughness with a backpack LiDAR
Antoine Lucas[1]; Celia Aranda Reina; Julien Bouchez; Jennyfer Druhan
[1] IPGP/CNRS

Direct push-color sensing and geophysical mapping – a combined approach to investigate floodplain structures
Ulrike Werban[1]; Manuel Kreck; Marco Pohle; Anne Köhler; Dietrich Peter; Christoph Zielhofer
[1] Helmholtz Center for Environmental Research - UFZ

Effect of clear-cutting on the dissolved organic matter in the Wüstebach catchment
Marie-Noëlle Pons[1]; Anne Poszwa; Andreas Lücke; Maia Batsatsashvili; Thomas Pütz; Heye Bogena; Roland Bol
[1] Université de Lorraine

Automated high resolution water sampler
Christoff Andermann[1]; Markus Reich; Torsten Queißer; Niels Hovius; Dirk Sachse
[1] Université Rennes

15:00 – 16:30, Room S6

Session: **Long-term environmental observation for understanding the Earth system in the Anthropocene**

Convener:
Steffen Zacharias, UFZ, Leipzig
Thomas Pütz, FZJ, Jülich
Jérôme Gaillardet, IPGP, Paris

12 min talk and 3 min discussion

Exploring soil water dynamics in the Alento hydrological observatory
Paolo Nasta[1]; Caterina Mazzitelli Nunzio Romano
[1] University of Naples

Analysis of Scale-dependent Spatial Correlations of Actual Evapotranspiration Measured by Lysimeters
Xiao Lu[1]; Jannis Groh; Thomas Pütz; Katrin Schneider; Harry Vereecken; Harrie-Jan Hendricks-Franssen
[1] Forschungszentrum Jülich GmbH

Revealing Carbon Dynamics from Long-Term Observational Data in a Mediterranean Savanna Ecosystem with Different Fertilization Treatments
Laura Nadolski[1]; Tarek El Madany; Arnaud Carrara; Anke Hildebrandt; Markus Reichstein; Sung-Ching Lee
[1] Max-Planck Institute for Biogeochemistry, Jena

Do we know our soil's water cycle well?
Jannis Groh[1]; Horst H. Gerke; Joan Cuxart; Daniel Martínez Villagrasa; Vilim Filipovic; Vedran Krevh; Ralf Gründling; Holger Rupp; Hans-Jörg Vogel; Jan Vanderborght; Harry Vereecken; Thomas Pütz
[1] Forschungszentrum Jülich GmbH

Differentiated response of pine and oak to air quality changes and recent drought in rural Northeastern Germany
Gerhard Helle[1]; Ingo Heinrich; Daniel Balanzategui
[1] Deutsches Geoforschungszentrum GFZ

The International Soil Moisture Network (ISMN): Ensuring a permanent service for delivering long-term, in situ soil moisture data
Wolfgang Korres[1]; Matthias Zink; Fay Boehmer; Tunde Olarinoye; Kasjen Kramer; Irene Himmelbauer; Daniel Aberer; Roberto Sabia; Raffaele Crapolicchio; Philippe Goryl; Klaus Scipal; Wouter Dorigo; Stephan Dietrich
[1] Federal Institute of Hydrology (BfG)

TUESDAY, 26 SEPTEMBER 2023

16:30 – 18:00	Rooms 27+28 and rooms 34+35 **Poster sessions**
18:00	Room S5 **Advisory Board Meeting**

WEDNESDAY, 27 SEPTEMBER 2023

09:00 – 10:30	**Plenary hall**
09:00 – 09:30	**Keynote: Representation of the water cycle and its coupling to the land surface in a kilometre-scale Earth System Model** Cathy Hohenegger – Max Planck Institute for Meteorology, Hamburg
09:30 – 10:00	**Keynote: Inferring Catchment Complexity: Integrating Water, Carbon, and Nitrogen Fluxes from Point to Catchment Scale** Lutz Breuer – Justus Liebig University Gießen
10:00 – 10:30	**Keynote: Modelling the dynamics of sediment and associated substances across temporal and spatial scales** Jantienne Baartman – Wageningen University
10:30 – 11:00	**Coffee break**
11:00 – 12:00	**Plenary hall**
11:00 – 11:30	**Keynote: Groundwater-surface water interactions as driver for streamflow dynamics: Insights from an experimental headwater catchment** Julian Klaus – University of Bonn
11:30 – 12:00	**Keynote: Observing interactions between tree roots, minerals, and fluids in a shale critical zone and implications for weathering and landscape evolution** Daniella Rempe – University of Texas at Austin
12:00 – 13:00	**Lunch, Restaurant**

WEDNESDAY, 27 SEPTEMBER 2023

13:00 – 14:30, Plenary hall

Session: **Biogeochemical processes at the soil and catchment scale**

Convener:
Nicolas Brüggemann, FZJ, Jülich
Anke Hildebrandt, UFZ
Laure Gandois, LEFE, Toulouse
Ralf Kiese, KIT IMK-IFU Garmisch-Partenkirchen

15 min talk and 3 min discussion

Microbial biofilms structure and manganese (bio)cycling: from field to lab studies
Valentine Rollot
Université Paris Cité, Institut de physique du globe de Paris, CNRS

Imbalances in dissolved elemental export fluxes disclose "hidden" Critical Zone pathways
David Uhlig[1]; Jakob Sohrt; Friedhelm von Blanckenburg
[1] Freie Universität Berlin

On previously unseen flowlines and their potential significance for understanding concentration-discharge patterns in headwater streams
Nicolaus van Zweel; Laurent Gourdol; Laurent Pfister; Erwin Zehe; Christophe Hissler[1]
[1] Luxembourg Institute of Science and Technology

Temporal and spatial pattern of riverine greenhouse gas emissions in a large temperate river
Claudia Schütze[1]; Matthias Koschorreck; Ingeborg Bussmann; Norbert Kamjunke; Michael Rode; Uta Ködel
[1] Helmholtz Center for Environmental Research (UFZ)

High-frequency concentration-discharge relationships of nitrate and dissolved organic carbon reveal altered nutrient mobilization during forest dieback
Andreas Musolff[1]; José L.J. Ledesma; Karsten Rinke; Jan H. Fleckenstein
[1] Helmholtz Center for Environmental Research (UFZ)

13:00 – 14:30, Room S6

Session: **Water and biogeochemical cycles in Earth system models**

Convener:
Harry Vereecken, FZJ, Jülich
Agnès Ducharne, METIS, Paris

12 min talk and 3 min discussion

The role of the thickness of the regolith cover on the Earth climate stability
Yves Godderis[1]; Pierre Maffre; Alexandre Pohl
[1] Geosciences Environnement Toulouse, GET, CNRS, UMR5563

Composite models of soil hydraulic properties for representing soil (de)compaction in land surface models
Filip Kiałka[1]; Omar Flores; Kim Naudts; Sebastiaan Luyssaert; Bertrand Guenet
[1] Ecole Normale Supérieure & CNRS

Groundwater in terrestrial systems modelling: a new climatology of extreme heat events in Europe
Liubov Poshyvailo-Strube[1]; Niklas Wagner[1]; Klaus Goergen; Carina Furusho-Percot; Carl Hartick; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

Soil Moisture Memory Mitigates or Amplifies Drought Effects
Mehdi Rahmati[1]; Dani Or; Wulf Amelung; Prof. Harry Vereecken
[1] Forschungszentrum Jülich GmbH

A drought-triggered hydrological tipping point in the central Sahel: an attribution study using system dynamics modelling.
Christophe Peugeot[1]; Erwan Le Roux; Valentin Wendling; Gérémy Panthou; Paul-Alain Raynal; Abdramane Ba; Ibrahim Bouzou-Moussa; Jean-Martial Cohard; Jérôme Demarty; Luc Descroix; Guillaume Favreau; Fabrice Gangneron; Manuela Grippa; Basile Hector; Pierre Hiernaux; Laurent Kergoat; Emmanuel Lawin; Thierry Lebel; Olivier Mora; Eric Mougin; Caroline Pierre; Jean-Louis Rajot; Jean-Pierre Vandervaere
[1] HydroSciences Montpellier (Université de Montpellier, CNRS, IRD, IMT-Mines Alès)

14:30 – 15:00 **Coffee break**

WEDNESDAY, 27 SEPTEMBER 2023

15:00 – 16:30, Plenary hall

Session: **Biogeochemical processes at the soil and catchment scale**

Convener:
Nicolas Brüggemann, FZJ, Jülich
Anke Hildebrandt, UFZ
Laure Gandois, LEFE, Toulouse
Ralf Kiese, KIT IMK-IFU Garmisch-Partenkirchen

15 min talk and 3 min discussion

Deforestation alters dissolved organic carbon and sulphate dynamics in a mountainous head-water catchments-a wavelet analysis
Qiqi Wang
Forschungszentrum Jülich GmbH

The influence of clear-cut on nutrient dynamics in the Wüstebach catchment (Eifel, Germany) – Preliminary results from a modelling study
Annemarie Bäthge[1]; Michael Rode; Heye Bogena; Mufeng Chen; Shirin Moradi; Roland Bol; Thomas Pütz
[1] Helmholtz Center for Environmental Research (UFZ)

Disentangling in-stream nitrate uptake pathways based on two-station high-frequency monitoring in high-order streams
Michael Rode[1]; Xiaolin Zhang; Xiaoqiang Yang; Robert Hensley; Andreas Lorke
[1] Helmholtz Center for Environmental Research (UFZ)

Nitrate and phosphorus export dynamics during the extreme storm events of the future
Rémi Dupas[1]; Mikaël Faucheux; Andrés Casanova; Laurent Jeanneau; Nicolai Brekenfeld; Ophélie Fovet
[1] INRAE - Institut Agro, UMR SAS

15:00 – 16:30, Room S6

Session: **Extremes and the critical zone: Water and matter transport during floods and droughts, intermittent streams and processes at the groundwater-surface water interface**

Convener:
Caroline Le Bouteiller, IGE, Grenoble
Claudia Schütze, UFZ, Leipzig
Andreas Musolff, UFZ, Leipzig
Agnès Rivière, Mines ParisTech, Fontainebleau

12 min talk and 3 min discussion

Study of the contribution of groundwater to floods in Mediterranean mountainous watershed
Ophélie Fischer[1]; Cedric Legoût; Caroline Le Bouteiller
[1] Univ. Grenoble Alpes, CNRS, Institut des Geosciences de l'Environnement (IGE)

Fine sediments deposition and remobilisation processes in a mesoscale mountain catchment
Cécile Delcourt[1]; Cédric Legoût; Caroline Le Bouteiller; Guillaume Nord
[1] Univ. Grenoble Alpes, CNRS, Institut des Geosciences de l'Environnement (IGE)

Floods and droughts research infrastructure (FDRI): enabling the hydrological research community
Gareth Old[1]; Jonathan Evans; Nick Everard; John Bloomfield; Patrick Harrison; Gemma Coxon; Simon Teagle; Wouter Buytaert; Matt Fry; Lucy Ball; Ali Rudd; James Sorensen; Nick Chappell; Thorsten Wagener
[1] UK Centre for Ecology & Hydrology

Monitoring large fluctuations of dissolved oxygen in intermittent streams with significant groundwater-surface interactions
Maxime Savatier
ANDRA

Combined Effects of Geological Heterogeneity and Discharge Events on Groundwater and Surface Water Mixing
Guilherme Emidio Horta Nogueira; Daniel Partington; Ingo Heidbüchel[1]; Jan H Fleckenstein
[1] Helmholtz Center for Environmental Research – UFZ, Leipzig

Seasonal and spatial variations of physicochemical parameters in headwater catchments to define groundwater input – Wüstebach Catchment, Germany
Konstantina Katsanou[1]; Maia Batsatsashvili; Alessandro Cattapan; Raymond Venneker; Thomas Pütz; Heye Bogena; Roland Bol; Jochen Wenninger
[1] IHE Delft Institute for Water Education

WEDNESDAY, 27 SEPTEMBER 2023

16:30 – 18:00	Rooms 27+28 and rooms 34+35 **Poster sessions**
19:30	**Departure by bus at the confernce venue**
20:00	**Dinner, Restaurant**

THURSDAY, 28 SEPTEMBER 2023

09:00 – 10:30	**Plenary hall**
09:00 – 09:30	**Keynote: TEMBO Africa: Seven sensors, five products, three services** Nick van de Giesen – Delft University of Technology
09:30 – 10:00	**Keynote: Mountain ecosystems in a changing climate** Frank Hagedorn – Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Birmensdorf
10:00 – 10:30	**Keynote: Earth Observation data for high resolution soil moisture monitoring** Anna Balenzano – Consiglio Nazionale delle Ricerche, Naples
10:30 – 11:00	**Coffee break**
11:00 – 12:00	**Plenary hall**
11:00 – 11:30	**Keynote: Land surface model parameters optimisation: where we are and new opportunities – Examples with the ORCHIDEE LSM** Philippe Peylin – LSCE, Saint-Aubin
11:30 – 12:00	**Keynote: Science data sharing – feedback from other communities: the case study of astronomy** Francoise Genova – Observatoire de Strasbourg
12:00 – 13:00	**Lunch, Restaurant**

THURSDAY, 28 SEPTEMBER 2023

13:00 – 14:30, Plenary hall

Session: **Biogeochemical processes at the soil and catchment scale**

Convener:
Nicolas Brüggemann, FZJ, Jülich
Anke Hildebrandt, UFZ
Laure Gandois, LEFE, Toulouse
Ralf Kiese, KIT IMK-IFU Garmisch-Partenkirchen

15 min talk and 3 min discussion

Impact of climate and management on grassland yields in the pre-alpine region of South Germany
Ralf Kiese[1]; Carolin Boos; Sophie Reinermann; Raul Wood; Ralf Ludwig; David Kraus
[1] KIT - Karlsruhe Institute of Technology

Influence of hydrological regime on soil-to-river pollutant fluxes in alpine areas
David Gateuille[1]; Julia Dusaucy; Lise Marchal
[1] EDYTEM – CNRS / Université Savoie Mont Blanc

Snowmelt and groundwater in mountainous streams and plants: a modeling approach in a snow-dominated catchment
Sylvain Kuppel[1]; Matthias Sprenger; Rosemary WH Carroll; Craig Ulrich; Kenneth H. Williams
[1] Géosciences Environnement Toulouse, University of Toulouse, CNRS - IRD - UPS - CNES

13:00 – 14:30, Room S6

Session: **Novel methods for the integration and exploration of environmental data**

Convener:
Ralf Kunkel, FZJ, Jülich
Jan Bumberger, UFZ, Leipzig
Ségolène Dega, UFZ, Leipzig
Isabelle Braud, RiverLy, Lyon

12 min talk and 3 min discussion

Building Scalable Time Series Data Infrastructures: State-of-the-Art Solutions for Accessible and Interoperable Environmental Data
Martin Abbrent[1]; David Schäfer; Florian Gransee; Joost Hemmen; Tobias Kuhnert; Luca Johannes Nendel; Bert Palm; Maximilian Schaldach; Christian Schulz; Martin Schrön; Thomas Schnicke; Jan Bumberger
[1] Helmholtz-Zentrum für Umweltforschung GmbH - UFZ

OneWater FAIR Data Platform: setting up a national FAIR water dataplatform and community
Sylvain Grellet[1]; Fanny Arnaud; Kenneth Maussang; Anne Laurent; Frédéric Huynh; Hervé Piegay; Lise Vaudor; Christelle Pierkot; Sandrine Charles; Yvan Le Bras; Laurent Longuevergne
[1] BRGM, Bureau de Recherches Géologiques et Minières, Orléans

A General Approach to Unbundle a Largely Monolithic Time-Series Management System
Ulrich Loup[1]; Jürgen Sorg
[1] Forschungszentrum Jülich GmbH

SOFAIR - A tool for publishing observation data within an ecosystem of interoperable services
Hervé Squividant[1]
[1] Institut Agro / INRAE - UMR SAS Rennes

13:00 - 14:30, Room S5

Session: **Challenges in understanding Critical Zone processes in Africa**

Convener:
Harald Kunstmann, KIT, Garmisch-Partenkirchen
Nanée Chahinian, HSM, Montpellier

15 min talk and 3 min discussion

AMMA-CATCH observatory: a portal for regionalizing eco-hydro-climatic observations in West Africa
Jean-Martial Cohard[1]; Manuela Grippa; Emmanuel Lawin; Christophe Peugeot; Marie Boucher; Mamadou Diawara; Jordi Etchanchu; Gayane Faye; Bil Assanou Issoufou; Ibrahim Mainassara; Moussa Malam Abdou; Ossenatou Mamadou; Armand Mariscal; Eric Mougin; Geremy panthou; Sounmaila Moumouni; Sylvie Galle
[1] Institute of Geosciences and Environment, Univ. Grenoble Alpes, CNRS, IRD

Current Developments and Challenges in Operating an Environmental Research Observatory in the Sudan Savanna in West Africa – Ten Years of WASCAL
Jan Bliefernicht
Augsburg University

Land-based mitigation options for climate change in West Africa: Results from WRF-NoahMP-Hydro high-resolution simulations
Souleymane Sy[1]; Jan Bliefernicht; Joel Arnault; Christiana Olsesegun; Benjamin Fersch; Ines Spangenberg; Samuel GUUG; Frank Neidl; Abdel Nassirou Yahaya; Harald Kunstmann
[1] Augsburg University

THURSDAY, 28 SEPTEMBER 2023

13:00 – 14:30, Plenary hall

Session: **Biogeochemical processes at the soil and catchment scale**

Convener:
Nicolas Brüggemann, Forschungszentrum Jülich GmbH
Anke Hildebrandt, UFZ
Laure Gandois, LEFE, Toulouse
Ralf Kiese, KIT IMK-IFU Garmisch-Partenkirchen

15 min talk and 3 min discussion

A review of the importance of mineral nitrogen cycling in the plant-soil-microbe system of permafrost-affected soils – changing the paradigm
Michael Dannenmann[1]; Elisabeth Ramm
[1] KIT - Karlsruhe Institute of Technology

13:00 – 14:30, Room S6

Session: **Novel methods for the integration and exploration of environmental data**

Convener:
Ralf Kunkel, FZJ, Jülich
Jan Bumberger, UFZ, Leipzig
Ségolène Dega, UFZ, Leipzig
Isabelle Braud, RiverLy, Lyon

12 min talk and 3 min discussion

Theia/OZCAR Thesaurus: lessons learned on implementing the I-ADOPT framework, a new Research Data Alliance recommendation designed to facilitate interoperability between scientific variables from different controlled vocabularies
Charly Coussot[1]; Isabelle Braud; Véronique Chaffard; Brice Boudevillain; Sylvie Galle
[1] Université Grenoble Alpes, IRD, CNRS, Météo-France, INRAE, OSUG

A machine learning framework to design basin specific drought indexes
Sami Miaari[1]; Andrea Castelletti; Elena Matta
[1] Forschungszentrum Jülich GmbH

13:00 - 14:30, Room S5

Session: **Challenges in understanding Critical Zone processes in Africa**

Convener:
Harald Kunstmann, KIT, Garmisch-Partenkirchen
Nanée Chahinian, HSM, Montpellier

15 min talk and 3 min discussion

How to adapt critical zone observation strategies to the evolving challenges of the African continent?
Chloé Ollivier[1]; Jordi Etchanchu; Ibrahim Mainassara; Jérôme Demarty; Jean-Louis Perrin; Françoise Vimeux; Alain Dezetter; Gil Mahé; Luc Séguis; Jean-Denis Taupin; Patrick Lachassagne; Nanée Chahinian
[1] HydroSciences Montpellier (HSM), Univ Montpellier

14:30 – 15:00 **Coffee break**

THURSDAY, 28 SEPTEMBER 2023

15:00 – 16:30, Plenary hall

Session: **Remote sensing for improved analysis of soil-vegetation-atmosphere dynamics at the regional scale**

Convener:
Carsten Montzka, FZJ, Jülich
Jian Peng, UFZ, Leipzig
Manuella Grippa, GET, Toulouse
Saskia Förster, GFZ, Potsdam

15 min talk and 3 min discussion

Gridded Profile Soil Moisture through Artificial Intelligence
Toni Schmidt[1]; Martin Schrön; Steffen Zacharias; Jian Peng
[1] Helmholtz-Centre for Environmental Research – UFZ

Mapping vegetation evolution in badlands in response to climate and erosion using aerial and satellite imagery
Thomas De Almeida, Caroline Le Bouteiller[1], Philippe Choler, Arthur Bayle, Laurent Borgniet
[1] Univ. Grenoble Alpes, INRAE, CNRS

Estimation of evapotranspiration in Sahelian regions from space: review and uncertainty analysis
Nesrine Farhani[1]; Jordi Etchanchu; Alain Dezetter; Pape Biteye Thiam; Aubin Allies; Gilles Boulet; Nanée Chahinian; Ansoumana Boudian; Lamine Diop; Ibrahim Mainassara; Pape Malick Ndiaye; Chloé Ollivier; Albert Olioso; Olivier Roupsard; Jérôme Demarty
[1] HydroSciences Montpellier (HSM), Univ Montpellier, CNRS, IRD

Use of nadir altimetry data to evaluate a continental hyper-resolution simulation over West Africa
Thierry Pellarin; Jean-Martial Cohard[1]; Hector Basile
[1] Institut des Géosciences de l'Environnement (IGE)

Mechanistic modelling of gross primary production (GPP) and latent heat flux (LE) using sun-induced fluorescence (SIF) observations in different water and light limitation conditions
Quentin Beauclaire[1]; Simon De Cannière; François Jonard; Bernard Longdoz
[1] TERRA, Gembloux AgroBioTech - Université de Liège

15:00 – 16:30, Room S6

Session: **Model data fusion: Improving model prediction and process understanding**

Convener:
Harrie-Jan Hendricks Franssen, FZJ, Jülich
Jean-Raynald de Dreuzy, ENS, Rennes

12 min talk and 3 min discussion

Parametrizing a water stress function in a crop growth model using a crop model coupled to a radiative transfer model
Simon De Cannière[1]; Michael Herbst; Harry Vereecken; Pierre Defourny; François Jonard
[1] Forschungszentrum Jülich GmbH

Impact of Covariance of Soil Moisture Measurements on Inverse Estimation of Soil Water Balance Parameters and on Soil Moisture Predictions
Marit Hendrickx[1]; Jan Vanderborght; Pieter Janssens; Jan Diels
[1] KU Leuven

Multivariate data assimilation for improving subsurface storage estimates: A case study of The Upper Rhine Basin
Samira Sadat Soltani[1]; Behzad Ataie-Ashtiani; Marwan Fahs; Ahmad Al Bitar
[1] Forschungszentrum Jülich GmbH

Coupling soil erosion model and lake sediment records reveals the importance of Alpine erosion crisis in total sediment exports during the Holocene
Théo Mazure[1]; Georges-Marie Saulnier; Vincent Chanudet; Manon Bajard; Fabien Arnaud; Pierre Sabatier; Jean-Philippe Jenny
[1] INRAE CARRTEL

Nitrous oxide emissions and N leaching from permanent grasslands in Western Europe: assessing the impact of management using DayCent
Marcio Dos Reis Martins[1]
[1] Agroscope

A data-driven framework for assembling multiple geoscientific models
Hao Chen[1]; Tiejun Wang; Carsten Montzka; Harry Vereecken
[1] Tianjin University

16:30 – 16:45, Plenary hall
Closing

Poster sessions

TUESDAY, 26 SEPTEMBER 2023, 16:30 – 18:00

1. Poster | ID: 95120
Advances and benefits of capillary bundle models: up-scaling approach for predicting electrical conductivity of frozen porous media
Haoliang Luo[1]; Damien Jougnot; Anne Jost; Aida Mendieta
[1] Sorbonne Université, UMR 7619 METIS, Paris, France

2. Poster | ID: 96674
Cosmic-Ray Neutron Sensing - precision soil moisture measurements at the hectare scale
Markus Köhli[1]; Martin Schrön; annis Weimar; Patrick Stowell; Heye Bogena; Ulrich Schmidt
[1] Heidelberg University, Germany

3. Poster | ID: 93601
Spectroscopic analysis of DOM in waters – what is easy and what is not?
Marie-Noëlle Pons[1]; Marie-Claire Pierret; Adrien Saphy; Anne Poszwa; Andreas Lücke; Maia Batsatsashvili; Thomas Pütz; Heye Bogena; Roland Bol
[1] Université de Lorraine, CNRS, LRG

4. Poster | ID: 93679
Autocorrelation in Soil Moisture Sensor Measurement Errors: A Mechanistic Error Modelling Approach
Marit Hendrickx[1]; Jan Diels; Pieter Janssens; Steffen Schlüter; Jan Vanderborght
[1] KU Leuven

5. Poster | ID: 93972
A Practical Approach to Correcting the Incoming Flux Variation for Cosmic Ray Neutron Sensing
Lasse Hertle[1]; Steffen Zacharias; Martin Schrön
[1] Helmholtz Center for Environmental Research - UFZ

6. Poster | ID: 94036
Playing in the sandbox: An experimental set-up for comparison of soil moisture profile sensors
Felix Nieberding[1]; Johan Alexander Huisman; Christof Huebner; Ansgar Weuthen; Bernd Schilling; Heye Bogena
[1] Forschungszentrum Jülich GmbH

7. Poster | ID: 94596
Using light-weight and autonomous nodal arrays to improve seismic data collection capabilities in steep and rugged-terrain critical zone observatories
Sylvain Pasquet[1]; Pierre-Alain Ayral; Ludovic Bodet; Julien Bouchez; Simon D. Carrière; Cédric Champollion; Frédéric Delarue; Lise Durand; Jennifer L. Druhan; Eric Gayer; Roger Guérin; Andrew Guertin; Damien Jougnot; Alicia Laden; Antoine Lucas; Quénéa Katell; Julien Thiesson; Marco D. Vásconez-Maza; Valentin Wendling
[1] Sorbonne Université

8. Poster | ID: 94626
Fostering the understanding of sub-footprint heterogeneity in Cosmic-Ray Neutron Sensing – challenges of irrigation monitoring
Cosimo Brogi[1]; Felix Nieberding; Markus Köhli; Vassilios Pisinaras; Olga Dombrowski; Johan Alexander Huisman; Andreas Panagopoulos; Harrie-Jan Hendricks-Franssen; Heye Bogena
[1] Forschungszentrum Jülich GmbH

9. Poster | ID: 95019
The First Continuous Field Record of 17O-excess of Atmospheric Water Vapor: Insights into Local and Regional Atmospheric Processes at a French Mediterranean Forest Site
Claudia Voigt[1]; Christine Vallet-Coulomb; Anne Alexandre; Clément Piel; Ilja Reiter; Jean-Philippe Orts; Joana Sauze; Elena Ormeno; Irène Xueref-Remy
[1] Department of Biology and Geology, University of Almería

10. Poster | ID: 95095
Measuring electrical self-potential in a spruce forest to observe the water exchanges in the subsurface-vegetation-atmosphere continuum
Nolwenn Lesparre[1]; Pierre-Daniel Matthey-Henry; Alain Hernandez; Damien Bonal; Simon D. Carrière; Haldan Elie Bertrand Koffi; Philippe Ackerer; Guy Marquis; Laurence Jouniaux; Damien Jougnot; Benjamin Belfort
[1] Université de Strasbourg, CNRS, EOST, ENGEES

11. Poster | ID: 94597
Scientific Discovery in Earth Science Using Deep Learning Technologies
Buse Onay[1]; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

TUESDAY, 26 SEPTEMBER 2023, 16:30 – 18:00

12. Poster | ID: 92953
Developing temporal phases of GHG emissions in a rewetted peatland site in Germany using long-term ecosystem carbon flux measurements
Aram Kalhori[1]; Christian Wille; Pia Gottschalk; Torsten Sachs
[1] GFZ German Center for Geosciences

13. Poster | ID: 93409
Evaluating the long-term relationships between soil water content and evapotranspiration in different soil orders of Iran
Farnaz Sharghi[1]; Seyed Bahman Mousavi; Mehdi Rahmati; Harry Vereecken
[1] University of Maragheh

14. Poster | ID: 93433
The Selhausen Minirhizotron Facilities: A Unique Set-Up to Investigate Subsoil Processes within the Soil-Plant Continuum
Felix Maximilian Bauer[1]; Lena Lärm; Normen Hermes; Harry Vereecken; Jan Vanderborght; Andrea Schnepf; Anja Klotzsche
[1] Forschungszentrum Jülich GmbH

15. Poster | ID: 93788
Using a network of networks for high-frequency multi-depth soil moisture observations to infer spatial and temporal drivers of subsurface preferential flow
Jannis Groh[1]; Hoori Ajami; Ryoko Araki; Octavia Crompton; Daniel Giménez; Daniel Hirmas; Bonan Li; John R. Nimmo; Nitin Singh; Matthias Sprenger; Pamela Sullivan; Inge Wiekenkamp; Briana M. Wyatt; Tianfang Xu
[1] University of Bonn / Institute of Crop Science and Resource Conservation (INRES)

16. Poster | ID: 93789
Monitoring global changes and water management strategies in Mediterranean mountain environments: hydro-socio-eco-meteorological observations in the Cévennes Mountains (Southeast France)
Valentin Wendling[1]; Pierre-Alain Ayral; Juliette Cerceau; Judicaël Arnaud; Guillaume Artigue; Brice Boudevillain; Nanee Chahinian; Christelle Guilhe-Batiot; Guillaume Nord; Chloé Ollivier; Isabelle Ruin; Anne Johannet; Didier Josselin
[1] HSM, Univ Montpellier, CNRS, IRD, IMT Mines Alès, Alès, France

17. Poster | ID: 94571
ENVIRONMENTAL MONITORING AS A METHOD OF ENVIRONMENTAL QUALITY MANAGEMENT
Olga Tertychna
Institute of Agroecology and Environmental Management of NAAS, Kyiv, Ukraine

18. Poster | ID: 94613
Critical analysis of the eLTER France compliance with the Whole System Approach concept of eLTER Research Infrastructure
Isabelle Braud[1]; Héloïse Bénard; Christophe Piscart; Jérôme Gaillardet
[1] OZCAR-RI, INRAE

19. Poster | ID: 95078
The Critical Zone observatory of Réunion island (France): a multidisciplinary observatory of the tropical Critical Zone in a basaltic volcanic setting
Alix Toulier; Jean-Lambert Join; Pierre Staménoff; Yoan Benoit; Geneviève Lebeau; Maxime Gautier; Caroline Gorge; Eric Gayer; Emmanuel Cordier; Victor Kbidi; Guillaume Payen; Magali David; Sophie Ferreira; François Bonnardot Météo France; Julien Bonnier; Stéphane Martel; Jimmy Gonthier; Emilie Roulleau; Jean-Pierre Cammas; Dominique Strasberg; Olivier Florès; Fabrice R Fontaine; Thomas Giambelluca; Eric Lajeunesse; Laurent Michon[1]; Claudine Ah-Peng[1]
[1] Université de La Réunion

20. Poster | ID: 96767
Complementarity of academic Critical Zone Observatories with Water Authority measurements
Alessio Gentile, Davide Gisolo, Davide Canone, Sara Ratto, Herve Stevenin, Andrea Giorgi, Marco Cauduro, Marcella Biddoccu, Giorgio Capello, Secondo Barbero, Christian Ronchi, Roberto Cremonini, Daniele Cat Berro, Luca Mercalli , Stefano Ferraris[1]
[1] DIST Politecnico and Università of Turin, Italy

21. Poster | ID: 92855
Short high-accuracy tritium data time series for assessing groundwater mean transit times and storages in the vadose and saturated zones of the Luxembourg Sandstone aquifer
Laurent Gourdol[1]; Michael K. Stewart; Uwe Morgenstern; Laurent Pfister
[1] Luxembourg Institute of Science and Technology (LIST)

22. Poster | ID: 93632
Opening questions on identifying water sources to trees: application of a multi tracer approach
Christophe Hissler[1]; Alessandro Montemagno; Jean François Iffly; Richard Keim; Laurent Pfister
[1] Luxembourg Institute of Science and Technology (LIST)

23. Poster | ID: 93880
Evolution of the subsurface water storage under drought conditions at catchment scale in central Europe with the hydrological model ParFlow/CLM
Alexandre Belleflamme[1]; Klaus Goergen; Suad Hammoudeh; Niklas Wagner; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

TUESDAY, 26 SEPTEMBER 2023, 16:30 – 18:00

24. Poster | ID: 93913
How Groundwater Models Can Benefit from Near-Surface Seismic Data?
Agnès Rivière[1]; Marine Dangeard; Ludovic Boder; Ramon Sanchez Gonzalez; Alexandrine Gesret
[1] Mines Paris PSL

25. Poster | ID: 93914
Comparative analysis of water storage dynamics for two OZCAR observatories using SAS functions and a GR conceptual hydrological model
Alban de Lavenne; Ophélie Fovet; Rémi Dupas[1]; Jordy Salmon-Monviola; Jean Marcais
[1] INRAE - Institut Agro, UMR SAS, Rennes

26. Poster | ID: 94551
Experimental seasonal monitoring and forecasting of total subsurface water storage over Germany: The FZJ Water Resources Bulletin
Suad Hammoudeh[1]; Alexandre Belleflamme; Niklas Wagner; Klaus Goergen; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

27. Poster | ID: 94605
Land use and land cover change effects on runoff in Rur Basin, Germany
Saurabh Shukla; Tesfa Worku Meshesha; Roland Bol[1]; Junye Wang
[1] Forschungszentrum Jülich GmbH

28. Poster | ID: 95013
Stress responses in the deep unsaturated zone: a forested catchment vulnerable to climate change
Theresa Blume[1]; Daniel Rasche; Andreas Güntner; Markus Morgner
[1] GFZ German Research Center for Geosciences

29. Poster | ID: 95066
Exploring greater depths: Cosmic-Ray Neutron Sensing as a tool for downhole soil moisture estimation
Daniel Rasche[1]; Jannis Weimar; Martin Schrön; Markus Köhli; Markus Morgner; Andreas Güntner; Theresa Blume
[1] GFZ German Research Centre for Geosciences

30. Poster | ID: 94624
Revision of states and fluxes from an energy imbalance perspective in a coupled LES and land surface model
Lijie Zhang[1]; Stefan Poll; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

31. Poster | ID: 93512
Long term response and adaptation of farmland water, carbon and nitrogen cycles to climate change in arid regions
Yue Li
Forschungszentrum Jülich GmbH

32. Poster | ID: 93608
Effect of forest restoration on greenhouse gas emissions from a small headwater stream, Eifel/Lower Rhine Valley (TERENO Network, Germany)
Maia Batsatsashvili[1]; Thomas Pütz; Roland Bol; Gretchen Gettel; Nicolas Brüggemann; Karsten Kalbitz
[1] Forschungszentrum Jülich GmbH

33. Poster | ID: 93669
Identifying Sources of Uncertainties in Simulated CLM5 Ensemble Simulations
Fernand Baguket Eloundou[1]; Lukas Strebel; Bibi S. Naz; Christian Terán Poppe; Harrie-Jan Hendricks-Franssen
[1] Forschungszentrum Jülich GmbH

34. Poster | ID: 94607
Linking the atmospheric water cycle and land-atmosphere coupling from fully coupled TSMP simulations through a novel atmospheric moisture analysis framework
Yikui Zhang[1]; Niklas Wagner; Klaus Goergen; Stefan Kollet
[1] Forschungszentrum Jülich GmbH

35. Poster | ID: 95090
The possible perverse effects of water reservoirs for irrigation as a drought adaptation solution: a feedback loop analysis
Christophe Peugeot[1]; Augustin Ouedraogo; wg. OZCAR working group on „Feed-back loops in the CZ"
[1] HydroSciences Montpellier (HSM), Université de Montpellier, CNRS, IRD, IMT-Mines Alès

36. Poster | ID: 93862
Micro-Wave scintillometry to measure evapotranspiration at landscape scale : Evaluation from two field campaigns
Jean-Martial Cohard[1]; Helene Barral; Catherine Coulaud; Bernard Mercier; Davy Regneau; Florian jaquet; Fabienne Lohou
1 University Grenoble Alpes

WEDNESDAY, 27 SEPTEMBER 2023, 16:30 – 18:00

1. Poster | ID: 93642
Controls on soil dissolved organic carbon along the 4000 km North-South forest transect in Eastern China
Jie Gu[1]; Roland Bol; Yang Wang; Huanchao Zhang
[1] Forschungszentrum Jülich GmbH

2. Poster | ID: 93857
Does nitrate regulate dissolved organic carbon mobilisation in wetland soils and its export towards stream water in agricultural catchments?
Thibault Lambert[1]; Patrick Durand; Rémi Dupas
[1] INRAE - Institut Agro, UMR SAS, Rennes, France

3. Poster | ID: 95114
Co-cropping of wheat cultivars with contrasted root systems: plot scale study to understanding the mechanisms underlying its resilience against environmental stresses
Samuel Le Gall[1]; Adrian Lattacher; Jordan Bates; Mona Giraud; Moritz Harings; Yang Yu; Christian Poll; Guillaume Lobet; Andrea Schnepf; Mathieu Javaux; Youri Rothfuss
[1] Forschungszentrum Jülich GmbH

4. Poster | ID: 96647
What control transit times versus Q relationships at the hillslope scale ? Implications for nitrate vs Q relationships
Jean Marcais[1]; Rémi Dupas; Ophélie Fovet; Jordy Salmon-Monviola; Alban de Lavenne
[1] INRAE RiverLy

5. Poster | ID: 95038
Elevation-dependent warming and its climatic drivers: A concerted field and modeling assessment for the Berchtesgaden National Park
Simon Zitzmann[1]; Harald Kunstmann[1]; Benjamin Fersch[2]; Patrick Laux[1]
[1] University of Augsburg, Institute of Geography

6. Poster | ID: 93783
The impact of subsurface life on ghost-rock karstification processes and cave formation
Guillaume Peugnet
IPGP, IGN, Paris University, France

7. Poster | ID: 94556
Role of the microbiota for soil transformation processes in arid and semiarid regions under simulated humidity
Susanne Liebner
GFZ, Potsdam

8. Poster | ID: 94642
Disantengling hydrological and geochemical drivers of rock-water-plant interactions: a case study with a process-based modelling environment
Sylvian Kuppel, IRD
Géosciences Environnement Toulouse

9. Poster | ID: 95091
Mineral substrate and fluid redox conditions control cell density in attached biofilms: in-situ incubation experiments in deep groundwater
Ivan Osorio-Leon
University of Rennes – CNRS, Géosciences Rennes, UMR 6118, Rennes

10. Poster | ID: 94587
What impact do intense events have on aquifer recharge?
Antoine Sobaga[1]; Florence Habets; Bertrand Decharme; Nicolas Beaudoin; Eric Vernet
[1] ENS

11. Poster | ID: 95103
Drought monitoring and modelling: the case of 2022 in a mid-mountain forested catchment
Benjamin Belfort[1]; Oscar Corvi; Sylvain Weill; Philippe Ackerer; Nolwenn Lesparre; Damien Bonal
[1] Université de Strasbourg, CNRS, ENGEES, Institut Terre et Environnement de Strasbourg, UMR 7063

12. Poster | ID: 95009
Do piezometric levels impact catchment-scale rainfall yield?
Vazken Andréassian[1]; Yann Ouzone; François Bourgin; Alban de Lavenne; Antoine Pelletier
[1] INRAE

13. Poster | ID: 93742
Spatial variability of C-N-P concentrations during the fragmentation and rewetting of an intermittent stream in a small temperate oceanic agricultural catchment
Andrés Casanova[1]; Rémi Dupas; Jeanneau Laurent; Alexandrine Pannard; Anne Jaffrezic; Ophélie Fovet
[1] INRAE - Institut Agro, UMR SAS, Rennes, France

14. Poster | ID: 94619
Groundwater-surface water dynamics in a headwater stream: exploring the influence of varying streamflow using a multitracer approach
Clarissa Glaser[1]; Julian Klaus
[1] University of Bonn

WEDNESDAY, 27 SEPTEMBER 2023, 16:30 – 18:00

15. Poster | ID: 96706
Neptoon – a Neutron Processing Tool for Python
Martin Schrön[1]; Erik Nixdorf; David Schäfer; Daniel Altdorff; Peter Dietrich; Steffen Zacharias
[1] UFZ – Helmholtz Centre for Environmental Research GmbH

16. Poster | ID: 93703
Soil Moisture Estimation from Multi-dimensional SAR Data
Nikita Basargin[1]; Alberto Alonso-González; Irena Hajnsek
[1] DLR – Deutsches Zentrum für Luft- und Raumfahrt

17. Poster | ID: 92952
Simulating soil moisture for sustainable irrigation: Integrating CLM-ParFlow model with multi-resolution data in the NRW domain
Shirin Moradi[1]; Carsten Montzka; David Mengen; Harry Vereecken
[1] Forschungszentrum Jülich GmbH

18. Poster | ID: 93408
Spatio-temporal Analysis of Surface and Root Zone Soil Moisture Derived from SMAP and SMOS Microwave Satellite Data Using in-situ Measurements in Senegal
Omar MARIGO
Universite Cheikh Anta Diop

19. Poster | ID: 93455
Unmanned Aircraft Systems (UAS) Evapotranspiration Estimates Evaluated in Comparison with TERENO Eddy Covariance Measurements
Jordan Bates[1]; Carsten Montzka; Harry Vereecken; Francois Jonard
[1] Forschungszentrum Jülich GmbH

20. Poster | ID: 93793
Retrieval of high-resolution Leaf Area Index maps from PlanetScope data
Rahul Raj[1]; Carsten Montzka; Bagher Bayat; Ahsan Raza
[1] Forschungszentrum Jülich GmbH

21. Poster | ID: 93961
GIS based identification of water harvesting potential area in the Bale lowlandof south eastern Ethiopia
Chala Chimdessa Goshel[1]; Zerihun Dibaba Tufa; Gadisse Dula Adugna
[1] Sinana Agricultural Research Center

22. Poster | ID:
Comparison of the gross primary productivity of the FLUXNET towers and remote sensing based models in Borneo island, Southeast Asia
Yohannes Ginting
University of Bonn, Institute of Geosciences, Department of Meteorology

23. Poster | ID: 95075
Suspended sediment transport in small and steep catchments
Amande Roque-Bernard; Antoine Lucas[1]; Eric Gayer; Pascal Allemand; Céline Dessert; Eric Lajeunesse
[1] IPGP/CNRS

24. Poster | ID: 93792
Modelling nitrogen and soil water balance with AgroC-N to aid biomass productivity at erosion-affected arable sites along a hummocky landscape
Rajina Bajracharya[1]; Lutz Weihermüller; Michael Herbst; Harry Vereecken
[1] Forschungszentrum Jülich GmbH

25. Poster | ID: 93861
Modeling carbon and nitrogen turnover in groundwater along a hill slope transect
Thanh Quynh Duong[1]; Falk Heße; Anke Hildebrandt; Martin Thullner
[1] Helmholtz Centre for Environmental Research – UFZ

26. Poster | ID: 94040
Assimilation of data from groundwater and cosmic-ray neutron soil moisture sensor networks into the integrated Terrestrial System Modeling Platform TSMP – The Rur catchment case study
Fang Li[1]; Heye Bogena; Bagher Bayat; Harrie-Jan Hendricks-Franssen
[1] Forschungszentrum Jülich GmbH

27. Poster | ID: 94616
Probabilistic water reservoir operation using implicit stochastic optimization and vine copula functions
Leandro Avila[1]; Miriam Mine; Eloy Kaviski
[1] Forschungzentrum Jülich GmbH

28. Poster | ID: 95062
Assimilation of in-situ soil water content and leaf area index to improve evapotranspiration prediction for European forest sites
Lukas Strebel[1]; Heye Bogena; Harry Vereecken; Harrie-Jan Hendricks-Franssen
[1] Forschungszemtrum Jülich GmbH

30. Poster | ID: 91796
Contribution of geoinformatics and geophysics in the prospection of groundwater reservoirs in hard-rock areas
AKOKPONHOUE Bertrand[1]; Assemien François YAO; Marc YOUAN TA; Nicaise YALO
[1] National Institute of Water (INE), University of Abomey-Calavi (Benin)

WEDNESDAY, 27 SEPTEMBER 2023, 16:30 – 18:00

31. Poster | ID: 93871
Characterization of the E. coli environment in surface waters of West Africa
Elodie Robert[1]; Marc-Antoine Mant; Manuela Grippa; Lartiges Bruno; Hedwige Nikiema; Moussa Boubacar Moussa; Laurent Kergoat; Amadou Abdourhamane Touré; Beatriz Funatsu; Emma Rochelle-Newall
[1] CNRS/LETG

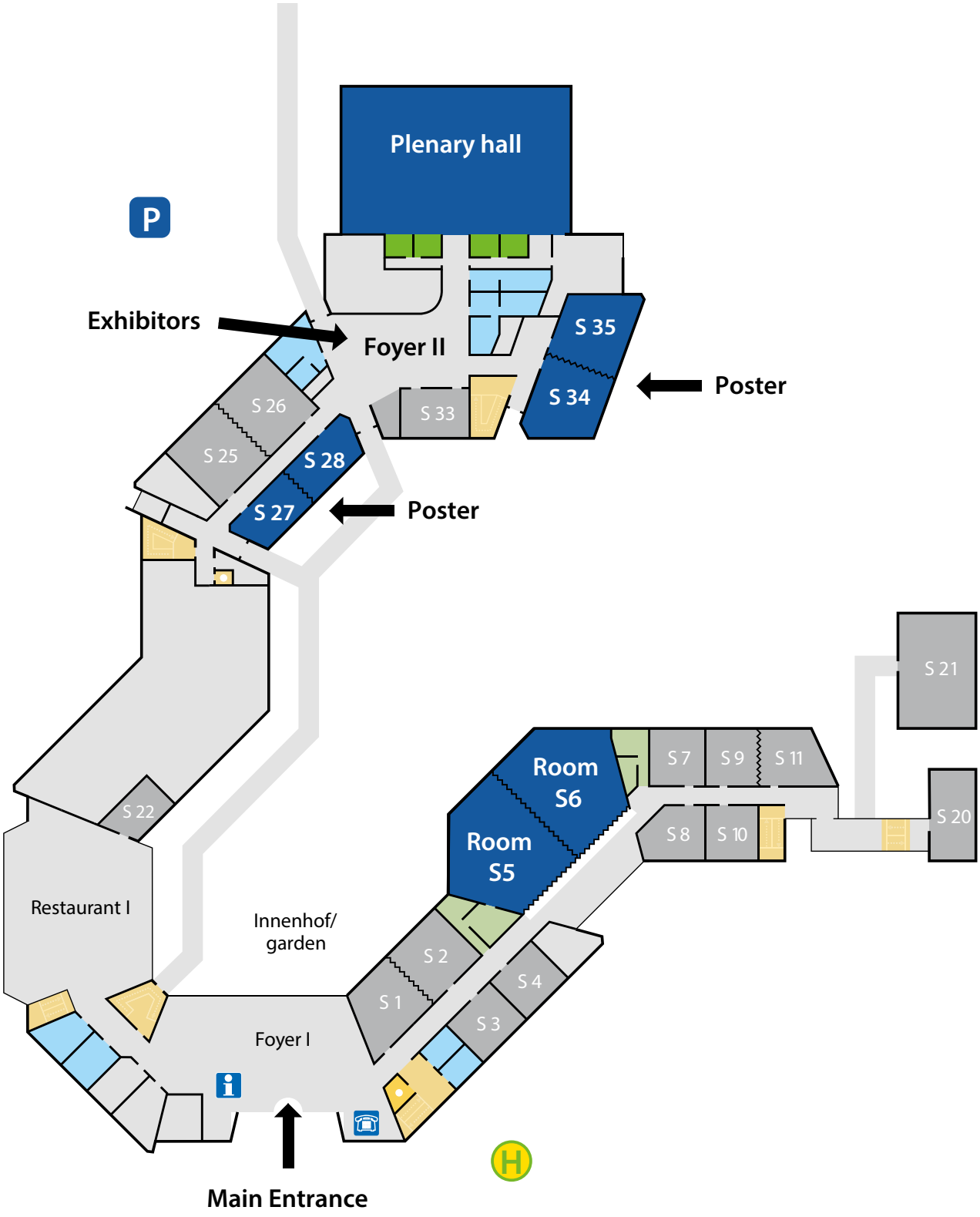
32. Poster | ID: 93896
Monitoring the isotopic composition (17O-excess, d-excess and d18O) of precipitation in Northern Benin: insights on climate variations
Christine Vallet-Coulomb[1]; Christophe Peugeot; Anne Alexandre; Diego Juan Chavez-Espinoza; Claudia Voigt; Alexandre Zappelli; Davud Au-Yang; Theodore Ouani; Simon Afouda; Maxime Wubda
[1] Aix Marseille Univ, CNRS, IRD, INRAE, CEREGE, Aix-en-Provence

33. Poster | ID: 93899
Large-scale tracer-aided hydrological modeling of West African basin
Diego Chavez-Espinoza[1]; Christine Vallet-Coulomb; Sylvain Kuppel; Christophe Peugeot; Basile Hector; Alexandre Zapelli; Christophe Yohia; Maxime Wubda; Theodore Ouani; Simon Afouda
[1] Aix-Marseille Univ., CNRS - IRD - INRAE - CEREGE

34. Poster | ID: 95060
Systematic synthesis of knowledge relating to the hydrological functioning of inlands valleys in tropical Africa
Mathias Tidjani[1], Pierre G. Tovihoudji, Sébastien Petit, PB Irénikatché Akponikpe, Marnik Vanclooster
[1] Université Catholique de Louvain, Earth and Life Institute (ELI)

35. Poster | ID:
Exploring and Closing the Energy Balance of Eddy Covariance Measurements along a Land Use Gradient in the West African Sudanian Savanna
Laura Nadolski; Jan Bliefernicht[1]; Dragan Petrovic; Manuel Rauch; Souleymane Sy; Samuel Guug; Rainer Steinbrecher; Harald Kunstmann
[1] Max-Planck Institute for Biogeochemistry, Jena

Floor Plan and Allocation of Sessions



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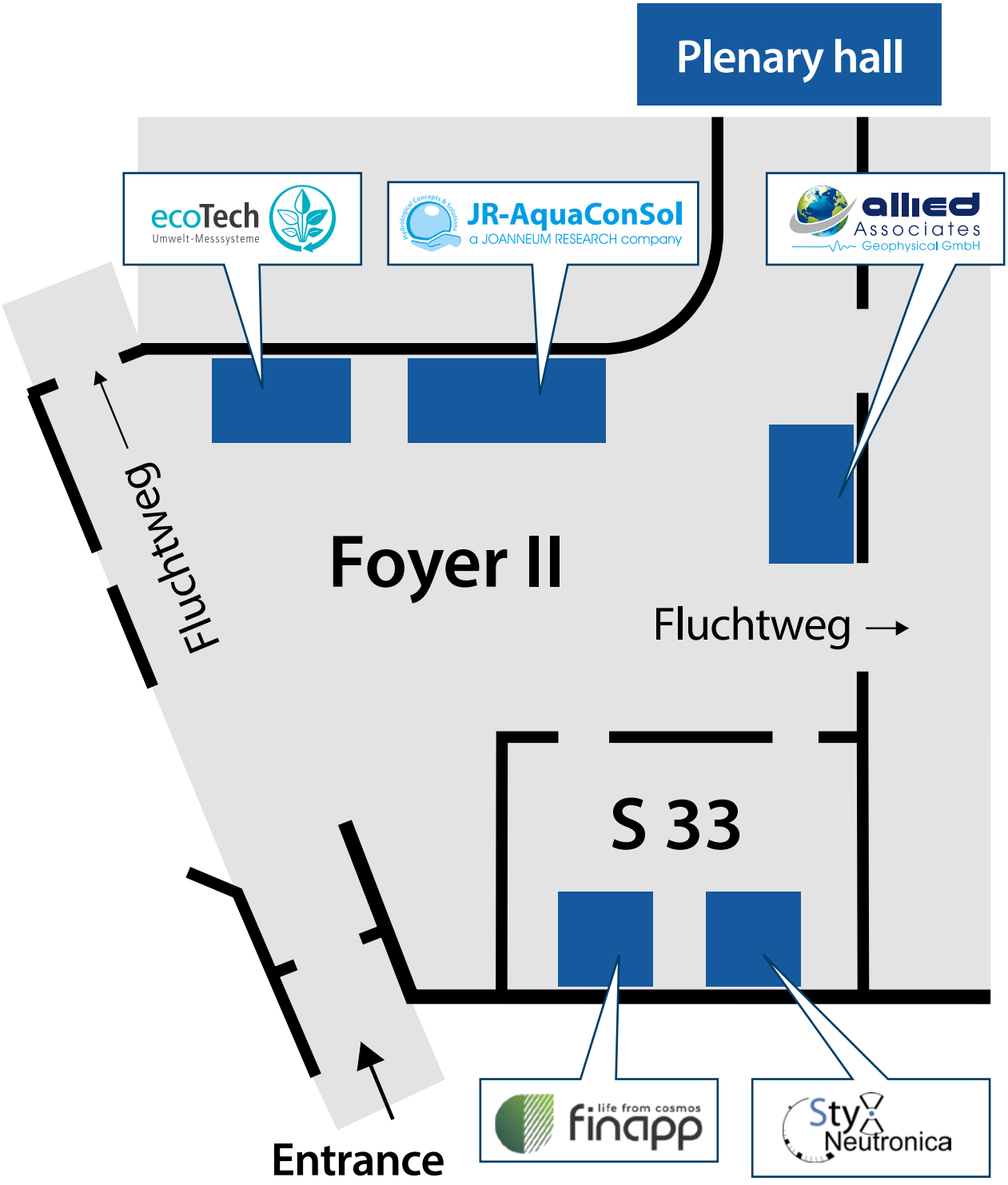
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StyX Neutronica

StyX Neutronica designs and manufactures state-of-the-art cosmic-ray neutron probes (CRNP) for area averaged soil moisture sensing on the hectare scale. We are proud to be part of many European hydrology research initiatives having installed our probes in Germany and many other countries in Europe. In recent years, European ecosystems have been subject to an increase in stress by extreme weather events such as droughts and floods. We at StyX Neutronica believe that the TERENO and OZCAR platforms are essential programs to improve our understanding of terrestrial systems mitigating the impact and consequences of climate change. With our support of the second TERENO-OZCAR conference we would like to specifically acknowledge the cooperation between France and Germany and contribute to the lively and productive scientific exchange at the conference.

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life from cosmos finapp

Finapp is the start-up company, spinoff of the University of Padua-Italy, that has developed CRNS probes capable of measuring Soil moisture and Snow Water Equivalent at depth (50 cm), on a large scale (5 to 20 hectares), and in real time due to the unique ability to detect neutrons and muons simultaneously.

The patented sensing part uses passive materials not derived from nuclear processing, the patented design allows exceptionally small dimensions (40 x 40 x 30) and a weight of only 4Kg, ideals for easy field use.

Finapp technology provides information on natural variations in the incoming flux, correlating muon and neutron counts, making Finapp the only self-referenced CRNS probe, with the added benefit of being site-specific.

Supporting Programme

Excursion „TERENO test site Wüstebach“ and „Rurtalsperre Schwammenauel“

On **Monday, 25 September 2023, 9:00-17:00** the conference participants have the opportunity to join a half day excursion. The field excursion will visit the TERENO test site Wüstebach, which is a key experimental research site of the Lower Rhine Valley-Eifel terrestrial observatory of TERENO. The Wüstebach test site is also part of the DFG project SFB-TR32 „Patterns in Soil-Vegetation-Atmosphere Systems: Monitoring, Modelling and Data Assimilation“ and belongs to LTER-D network.

The impressive Rutalsperre Schwammenauel with a capacity of 205 million cbm is one of the largest dams in Germany. The 480 meter long dam wall consists of a layer of earth and rock with a clay seal and a concrete base.

Special Event and Apero „Franco-German research and scientific cooperations“

The kick-off for the conference reception will be a special event on **Monday, 25 September, 18:00-19:00**.

Samuel Pujade-Renaud will moderate the exchange on Franco-German scientific and research cooperations: history, timeliness, funding opportunities.

All conference attendees are cordially invited to join this event at the conference venue.

Conference Reception

A conference reception and ice breaker party (DJ starts at 20:30) will be open for all conference participants on **Monday, 25 September, 19:00** at the conference venue. All conference attendees are cordially invited to this reception.

Conference Dinner

The Conference Dinner will be held on **Wednesday, 27 September 2023** on the river boat “Moby Dick” – a pleasant and relaxing way to have dinner and enjoy the river Rhine.

Please note that the conference dinner is not included in the conference fee and an extra booking option.

Address:
Brassertufer Am Alten Zoll
Landebrücke 4
53111 Bonn

Locations Bonn

1

Ship Moby Dick
Brassertufer Am Alten Zoll
Landebrücke 4
53111 Bonn

How to get there:

2

Gustav-Stresemann-Institut
Langer Grabenweg 68
53175 Bonn

How to get there:

Dinner Transfer
Departure by bus at the confernce venue
27 September 2023, 19:30

Publication Details

2nd TERENO-OZCAR Conference, 25 - 28 September 2023
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