

Monday, 29.08., Room Z107

- 08:30 Registration
- 09:00 Welcome and introduction to MARISS  
Cr. Sandhu, coordinator MARISS
- 09:15 Keynote speech: 30 years of riverbank filtration research at the University of Applied Sciences Dresden  
Prof. Dr.-Ing. T. Grischek, Head of Division of Water Sciences
- 09:45 Keynote speech: Groundwater in a changing environment  
Dr. C. Stefan, Co-chair of IAH Commission on MAR
- 10:15 Coffee break
- 10:30 - 16:30 Participants' presentations
- 10:30 Feasibility studies for MAR  
Dang Tran Trung
- 10:45 Risk assessment of groundwater contamination during MAR with urban waters in the Geer Basin, Belgium  
Robin Glaude
- 11:00 Exploring MAR as an alternative for environmental compensation or restoration in Chile  
Valentina Astudillo
- 11:15 Application of MAR for sustainable water use in Vietnam  
Nguyen Duy Dung
- 11:30 MAR in a sustainable remediation of small sites  
Cristina Missori
- 11:45 Aquifer recharge analysis for the ASADAS of the Garzon River Basin, Nicoya, Guanacaste, Costa Rica  
Maria Vargas
- 12:00 Riverbank filtration in Vietnam  
Tong Thanh Tung
- 12:15 Riverbank filtration in Egypt  
Ahmed Salah
- 12:30 Photo session and lunch break
- 13:30 Numerical and experimental flow and transport modelling during riverbank filtration under conditions of climate change  
Elnaz Zehtabian
- 13:45 Integrated water resources management at basin-scale: Assessment of water stress and climate change impacts  
Miri Mahdi
- 14:00 Human activity impacts on hydrological processes in a highly-managed basin, Iran  
Nesar Nasiri

- 14:15 Water resources management strategies in the Indus Basin of Pakistan  
Muhammad Muzammil
- 14:30 River water-groundwater interaction and assessment of water quality in the lower Cauvery River Basin, India  
Keerthan Lingaiah
- 14:45 Alternatives for management of hydrocarbon produced water in mature oil fields in Colombia  
Mauricio Mendoza
- 15:00 Coffee break
- 15:30 Assessment and mapping of groundwater vulnerability to pollution using DRASTIC, GOD and SI methods: Application to the south-eastern Hungarian region  
Abdelouahed Fannakh
- 15:45 Advanced model driving vulnerability mapping of Yaounde, Cameroon  
Ayaba Abendong
- 16:00 Sustainable groundwater development in Mekong Delta, Vietnam. Case study: Tra Vinh Province  
Pham Van Tuan
- 16:15 MAR for sustainable water management  
Oskar Bensch
- 18:00 Ice-breaker dinner (Bautzner Str. 58, see map)

Tuesday, 30.08, Room Z107

- 09:00 Hydraulic aspects and management of clogging  
T. Grischek
- 10:30 Coffee break
- 10:45 Well design  
T. Grischek, Dr.-Ing. C. Sandhu
- 12:00 Lunch
- 13:00 Design of RBF schemes and site selection concept  
C. Sandhu, N.A. Hoang
- 14:30 Coffee break
- 14:45 Lab work I: Hydraulics and clogging  
T. Grischek, C. Sandhu
- 17:00 Coffee break
- 17:15 Group project on MAR design and site selection  
T. Grischek, C. Sandhu

Venue

Hochschule für Technik und Wirtschaft Dresden  
Friedrich-List-Platz 1, 01069 Dresden  
[www.htw-dresden.de](http://www.htw-dresden.de), [mariss@htw-dresden.de](mailto:mariss@htw-dresden.de)

Wednesday, 31.08.

- 07:30- 18:00 Technical excursion to Waterworks Torgau, Saxony  
Meeting point at the HTW Dresden venue front building

Thursday, 01.09., Room Z824

- 09:00 Numerical modelling of MAR schemes  
Dr.-Ing. T. Reimann, TU Dresden, C. Sandhu
- 10:30 Coffee break
- 10:45 Numerical modelling of MAR schemes applications  
T. Reimann, C. Sandhu
- 12:00 Lunch
- 13:00 Water quality modelling  
T. Reimann, C. Sandhu
- 14:30 Coffee break in Z801
- 14:45 Water quality modelling applications  
T. Reimann, C. Sandhu
- 16:15 Coffee break
- 16:30 Group project on MAR design and site selection  
C. Sandhu

Friday, 02.09., Room Z824

- 09:00 Web-based numerical modelling and optimisation of MAR  
Dr. C. Stefan, TU Dresden
- 10:30 Coffee break
- 10:45 Web-based numerical modelling and optimisation of MAR applications  
C. Stefan
- 12:00 Lunch
- 13:00 MAR in coastal aquifers  
Cr. Sandhu
- 14:30 Coffee break in Z801
- 14:45 MAR in coastal aquifer applications  
Cr. Sandhu
- 16:15 Coffee break
- 16:30 Group project on MAR design and site selection

Saturday/Sunday

Individual sight-seeing in Dresden/Saxony

## Monday, 05.09., Room Z107

- 09:00 Water quality aspects and attenuation processes  
T. Grischek
- 10:30 Coffee break
- 10:45 Water quality aspects: oxygen, nitrate, ammonium  
G. Covatti
- 11:30 Removal of organic micro-pollutants: SOMA2 tool application (Room Z824)  
N. A. Hoang
- 12:00 Lunch
- 13:00 Water quality aspects: iron, manganese  
T. Grischek
- 14:00 Coffee break
- 14:15 Pathogen removal  
C. Sandhu
- 15:45 Lab work II: Water quality aspects  
C. Sandhu, G. Covatti, Y. Adomat
- 18:00 Group project on MAR design and site selection

## Tuesday, 06.09., Room Z107

- 09:00 Behaviour of organic micro-pollutants (OMPs)  
T. Grischek
- 10:45 Lab visit: Analytical methods and lab experiments to determine the attenuation rates of OMPs  
Lale Carstensen, Institute for Water Chemistry, TUD
- 12:00 Lunch
- 13:00 Post-treatment of RBF water for drinking water supply: monitoring and disinfection  
Dr. M. Wagner, German Water Centre, Dresden site
- 14:30 Coffee break
- 14:45 Lab work III: batch, column and channel experiments  
M. Musche, G. Covatti, C. Sandhu
- 17:00 Coffee break
- 17:15 Group project on MAR design and site selection

## Wednesday, 07.09.

- 08:00 - 14:00 Technical excursion to Waterworks Dresden-Hosterwitz  
15:00 Preparation of group project presentations (Room Z824)



Visit to the infiltration basin at the Waterworks Dresden-Hosterwitz, 2021

## Thursday, 08.09., Room Z107

- 09:00 MARISS exam  
C. Sandhu, Cr. Sandhu
- 10:30 Coffee break
- 10:45 Group project presentation and discussion: Team 1 & 2  
T. Grischek, C. Sandhu, N. A. Hoang
- 12:00 Lunch
- 13:00 Group project presentation and discussion: Team 3 & 4  
T. Grischek, C. Sandhu, N. A. Hoang
- 14:15 Coffee break
- 14:30 Worldwide case studies  
G. Covatti, N.A. Hoang

## Friday, 09.09., Room Z107

- 09:00 Regulations, policies, guidelines, quality standards and risk assessment  
C. Stefan
- 10:30 Coffee break
- 10:45 MAR Debate: discussion of open questions  
T. Grischek, C. Sandhu, C. Stefan, Cr. Sandhu
- 12:00 MARISS closing ceremony  
T. Grischek, Cr. Sandhu
- 13:00 Farewell lunch

## MARISS Team

Prof. Dr.-Ing. T. Grischek, HTW Dresden, Head of the Water Sciences Division has expertise in groundwater management, water supply, bank filtration, artificial groundwater recharge, removal of iron, manganese, organic micro-pollutants.

Cr. Sandhu, HTW Dresden, MARISS Coordinator, has expertise in unsaturated zone and groundwater recharge modelling, software development, analytical methods.

Dr.-Ing. C. Sandhu, HTW Dresden, has expertise in bank filtration, groundwater management and removal of pathogenic microorganisms.

G. Covatti, HTW Dresden, has expertise in groundwater chemistry, drinking water production through bank filtration and redox processes.

N. A. Hoang, HTW Dresden, has expertise in feasibility studies for bank filtration, GIS, geohydraulic modelling, and site selection.

F. Musche, HTW Dresden, has expertise in MAR field and lab work, RBF well construction.

Y. Adomat, HTW Dresden, has expertise in water chemistry, assessment of OMPs, drinking water treatment.

Dr. C. Stefan, TU Dresden, has expertise in artificial groundwater recharge, integrated water resources management and decision support systems for sustainable water management.

Dr. J. Glass, TU Dresden, has expertise in planning, management, and optimisation of MAR, software development and web-based tools.

Dr.-Ing. T. Reimann, TU Dresden, has expertise in hydraulics and transport in karst aquifers, development and application of numerical models, hydraulics and solute transport in aquifers and transition zone between saturated and unsaturated zones.

Dr. H. Börnick, TU Dresden, has expertise in analytical methods for the determination of OMPs in water, degradation and sorption of OMPs during drinking water treatment.

Dr. M. Wagner, TZW Dresden, has expertise in online sensor development and application, disinfection strategies, data science and machine learning.