OUTLINE

Managed aquifer recharge (MAR) represents the intentional recharge of surface water to aquifers. MAR can be applied for seasonal water storage, restoration of overexploited aquifers, prevention of land subsidence, control of salt water intrusion, improvement of water quality etc.

Depending on local conditions and project objectives, aquifer augmentation can be primarily based on infiltration or interception techniques using water from different sources.

During the Summer School, the participants will get familiar with different MAR techniques and will be guided through different steps in planning, operation and optimization of MAR schemes.

INFORMATION

Requirements
Graduate and post-graduate students with Bachelor or Master degree in hydro sciences or related areas. General knowledge on groundwater management (previous experience with GIS tools and simulation models are of advantage).

Application
Send your application (CV and motivation letter) by email to Ms. Claudia Schönekerl: claudia.schoenekerl@tu-dresden.de.

Deadline for application
30 April 2016

Costs
Participation to INOWAS Summer School 2016 is free of charge, accommodation on TUD campus will be provided. Travel costs must be covered by attendees but grants will be available for selected applications.

More information
www.tu-dresden.de/uw/inowas

Contact
Technische Universität Dresden
Department of Hydrosciences
Junior Research Group INOWAS
Pratzschwitzer Str. 15
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Photo: MAR scheme in Salisbury, Australia
**PROGRAMME**

**Sunday, 4 September 2016**
- 17:00  Welcome reception
- 18:00  Presentation of participants
- 19:00  Short introduction of INOWAS project
- 20:00  Introduction of Summer School agenda
- 21:30  Ice-breaking buffet

**Monday, 5 September 2016**
- 08:00  Lecture notes
- 09:00  Introduction to managed aquifer recharge: definitions, classification, technologies
- 10:00  Lecture notes
- 11:00  Water balance and estimation of natural groundwater recharge
- 12:00  Lunch break
- 13:00  Practical exercise
- 14:00  Estimation of natural groundwater recharge using a numerical model
- 15:00  Field trip
- 16:00  Test-field infiltration in Pirna-Copitz

**Tuesday, 6 September 2016**
- 08:00  Lecture notes
- 09:00  Selection of suitable sites for application of managed aquifer recharge
- 10:00  Lecture notes
- 11:00  Selection of methods for managed aquifer recharge
- 12:00  Lunch break
- 13:00  Practical exercise
- 14:00  Application of managed aquifer recharge to a case study – method selection
- 15:00  Practical exercise
- 16:00  Multi-criteria GIS-based analysis of suitable locations for MAR implementation

**Wednesday, 7 September 2016**
- 08:00  Lecture notes
- 09:00  Processes occurring in soil during MAR (physical, chemical, biological)
- 10:00  Lecture notes
- 11:00  Operation and maintenance of MAR schemes
- 12:00  Lunch break
- 13:00  Practical exercise
- 14:00  Experimental determination of soil and water flow parameters in laboratory and field

**Thursday, 8 September 2016**
- 08:00  Lecture notes
- 09:00  Modeling of managed aquifer recharge applications
- 10:00  Practical exercise
- 11:00  Web-based simulations for optimization of MAR schemes
- 12:00  Lunch break
- 13:00  Role-playing exercise
- 14:00  Participants will be assigned different roles and asked to simulate a MAR project
- 19:00  Dinner
- 20:00  Official Summer School diner

**Friday, 9 September 2016**
- 08:00  Case study
- 09:00  Detailed presentation of one case study (e.g. Dresden-Hosterwitz)
- 10:00  Field trip
- 11:00  River bank filtration in Dresden-Hosterwitz
- 12:00  Lunch break
- 13:00  Closing ceremony
- 14:00  Summer school evaluation, attending certificates, closing ceremony