

# Summer School

Novel monitoring techniques to assess contaminant sources,  
natural processes and remediation performance  
with focus on nutrient and carbon cycles

11-13 September 2017

Athens, Greece

The aim of this 3-day summer school is to explore the role of nutrient and carbon cycles in the natural environment, in particular their relevance in groundwater, soil and agricultural processes, assessment and management approaches. Novel laboratory and field-based monitoring techniques which can be used to assess nutrient transport, natural attenuation processes and remediation technologies will be presented. The course will cover theoretical aspects, use of appropriate modelling and analytical tools, field-scale *in situ* applications and practical demonstrations.

The summer school will provide participants with a wider understanding of management issues related to land use impacts on our soils, groundwater, drinking water and agricultural activities within European countries from different perspectives. Participants will gain insight into state-of-the-art monitoring technologies and assessment methodologies necessary to interpret nutrient and carbon cycles and impacts in environmental systems.

The sessions will be presented by experienced training facilitators and experts from the INSPIRATION Innovative Training Network ([www.inspirationitn.eu](http://www.inspirationitn.eu)) and the National Technical University of Athens. The programme includes technical sessions and hosted field trips, with the objective of consolidating participant understanding and skills development.

The event is open to external participants including, but not limited to, stakeholders, practitioners, managers, researchers and students with interests in the assessment, management and remediation of nutrient and carbon impacts from different sources. Participants with backgrounds in agricultural/environmental engineering, environmental sciences, social sciences and policy are encouraged to attend. The course will be attended by scientists and researchers from the INSPIRATION Innovative Training Network, providing a unique opportunity for networking with leading experts in the field.

Further information on the technical programme, joining instructions and venue for the summer school is provided overleaf. Registration for this summer school is essential as places are limited. Please complete the pdf application form by filling in page 4 of this flyer in English and sending as a pdf e-mail attachment to Dr Gabriella Kakonyi ([g.kakonyi@sheffield.ac.uk](mailto:g.kakonyi@sheffield.ac.uk)) by **4 September 2017** at the latest. Technical enquiries should be directed to Dr Kay Knoeller ([kay.knoeller@ufz.de](mailto:kay.knoeller@ufz.de)). A Certificate of Attendance will be provided to participants wishing to attend for CPD training.



# Programme

## Monday, 11 September

- 9.00 – 9.30 Registration
- 9.30 – 11.00 Nutrient transport and turnover in agricultural catchments – Insights from stable isotope investigations  
Part I: Tracing the fate of nitrate in mesoscale river catchments  
Part II: Pollution swapping in subsurface catchments: Too much nitrogen fertilizer causes a sulfate problem in an aquifer used for drinking water production  
*Session facilitator: Kay Knöller (Helmholtz Centre for Environmental Research)*
- 11:00 – 11:15 Coffee/tea break
- 11:15 – 12:45 Monitoring nitrate contamination and degradation in groundwater  
Part I: Nitrate attenuation in groundwater – recognition and quantification of hydrogeochemical processes by monitoring and mathematical approaches  
Part II: Identification of denitrification processes and prognosis of denitrification potential in aquifer sediments – a regional case study, Hessian Ried, Germany  
*Session facilitators: Christine Kübeck (IWW-Beratung GmbH) and Christoph Schüth (Institute of Applied Geosciences, Technical University of Darmstadt)*
- 12.45 – 14.15 Lunch break
- 14.15 – 15.15 Monitoring concepts for investigating agriculture-borne nutrient matter budgets and flux dynamics across the land/ocean interface and related implications for coastal biodiversity and ecosystem services  
*Session facilitator: Michael Schübert (Helmholtz Centre for Environmental Research)*
- 15.15 – 15.30 Coffee/tea break
- 15.30 – 16.30 WebGIS based simulation of land use effects on regional nutrient balances using the model STOFFBILANZ  
*Session facilitator: Carsten Lorz (Hochschule Weihenstephan-Triesdorf - University of Applied Sciences)*
- 16.30 – 17.30 Improving monitoring strategies and process understanding using novel continuous sensor technologies  
*Session facilitator: Michael Rode (Helmholtz Centre for Environmental Research)*
- 17.30 – 21.30 Plenary session, networking and evening meal in local restaurant

## Tuesday, 12 September

- 9.00 – 17.30 Agricultural catchment field trip, North Athens (whole day) with the focus on groundwater and surface water quality monitoring and fresh/waste water management (Lake Yliki Athen's major drinking water reservoir, its catchment and associated cotton agricultural field site visit. Bus leaves from Electra Hotel at 9.00. Lunch will be taken near site at a local restaurant
- 17.30 – 21.30 Plenary session, networking and evening meal in central Athens

## Wednesday, 13 September

- 9.00 – 16.00 On-site technical demonstration: industrial equipment for high resolution hydrological monitoring and data processing. Bus leaves for Lavrion from Electra Hotel at 9.00. Lunch at local restaurant in Lavrion, returning via Sounion (Temple of Poseidon), arriving in Athens ca. 16.00

## Cost

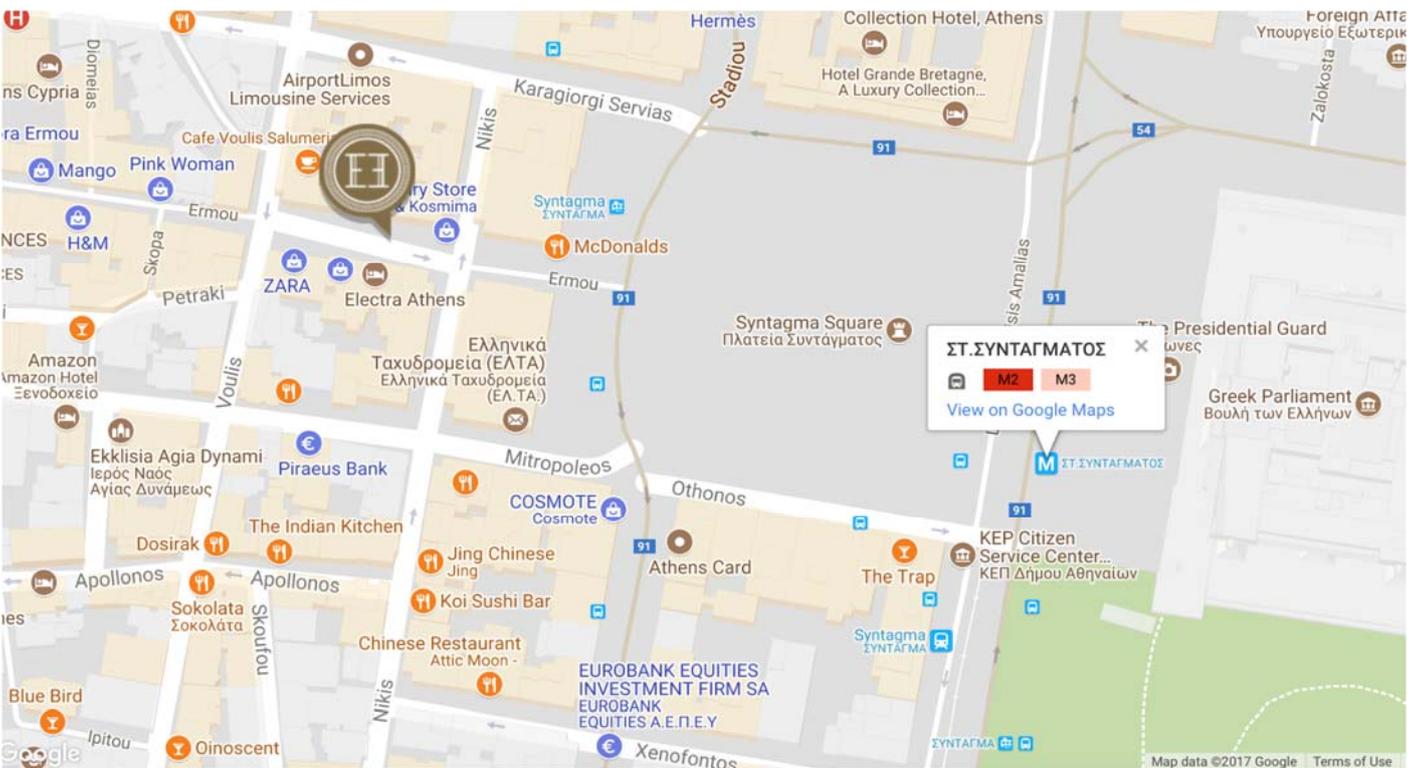
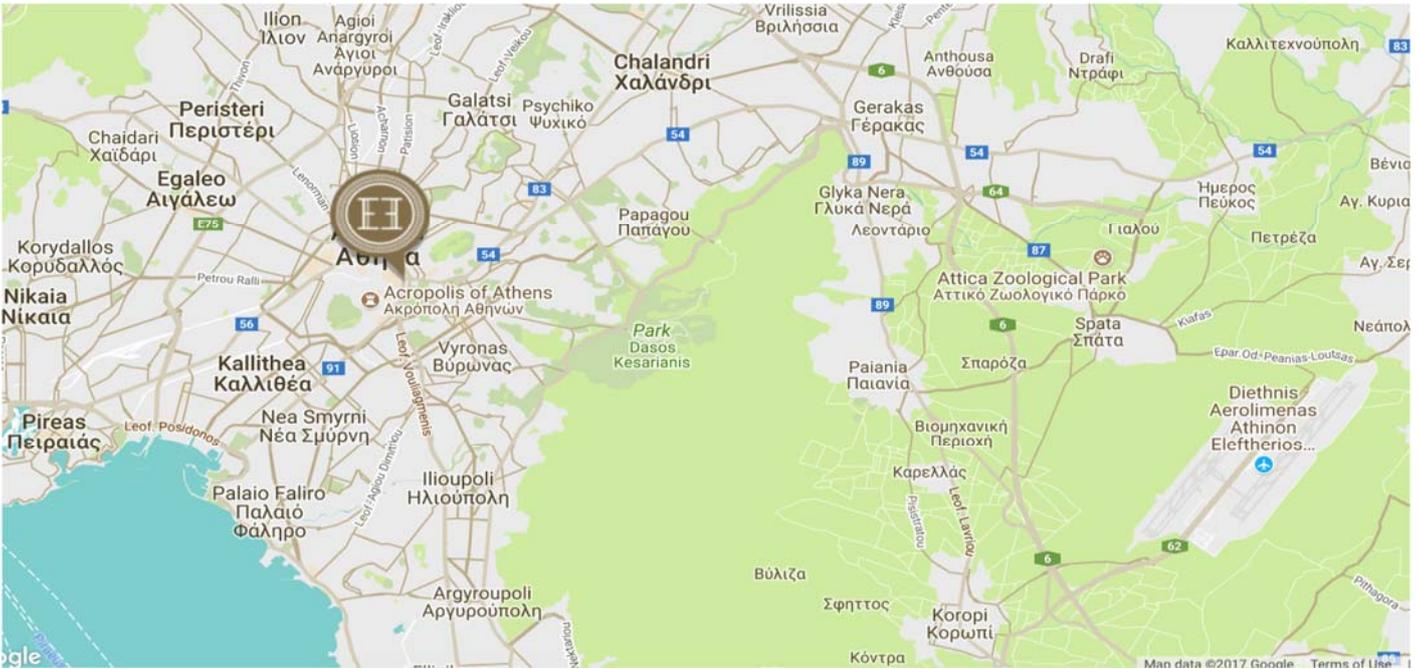
The fee for the summer school is €150, payable electronically upon receipt of registration. This covers course notes, lunch, dinner, coffee/tea breaks, field site visit and Certificate of Attendance. Single occupancy accommodation (incl. breakfast) is available at a discounted price of €140 per night at the Electra Hotel. Twin occupancy room are also available on request for €85 per person per night. If you wish to stay in the Electra Hotel, please indicate this on the application form. Participants must cover their accommodation costs, thus for the latter the hotel will contact you separately for payment details.

## Venue

The summer school will be hosted in the Electra Hotel, located at 5 Ermou Street in central Athens. The closest metro station is Syntagma Square, metro line M3. This line has also a direct connection to Athens International Airport ('Eleftherios Venizelos'). A ride between the airport and Syntagma Square is approximately 40 minutes. Please see maps overleaf.



# Location Maps



# Application for the INSPIRATION Summer School 2017

Name:

Affiliation:

Position:

Start and anticipated end-year of study if relevant:

Email:

Tel:

Address:

Accommodation request at Electra Hotel:    yes    no    single    twin    (tick chosen options)

If yes, indicate your planned check-in and check-out dates:

If twin, please indicate name of applicant to share with:

## Statement of motivation

*A brief paragraph (<200 words) describing what you hope to gain from the seasonal school and what contribution you might bring to the course as a participant*

## Statement of experience

*A brief paragraph (<200 words) describing your experience using quantitative and qualitative data evaluation techniques, work with agricultural practices, contaminated sites/remediation, and your main discipline of research (e.g., natural sciences, agricultural engineering, social sciences, etc.)*

Signature \_\_\_\_\_ Date \_\_\_\_\_

