



Asociación Internacional de Hidrogeólogos
Grupo Español



UNIVERSIDAD
DE GRANADA

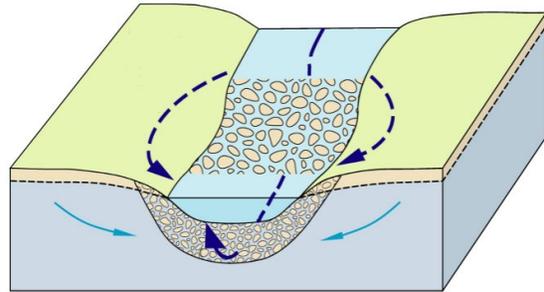
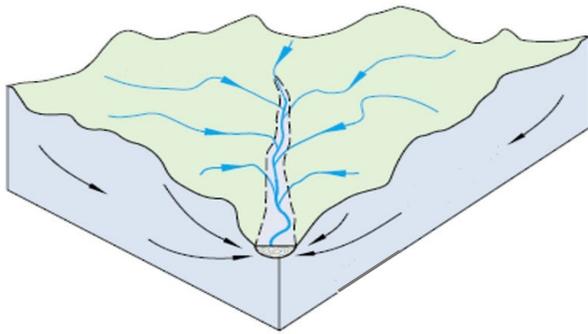


UNIVERSITY OF
CALGARY



COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT

Surface Water - Groundwater Interaction: From Watershed Processes to Hyporheic Exchange



- DATES:** May 15-19, 2023
- TIME:** 8:30am - 14:30pm
- INSTRUCTORS:** Don Rosenberry, Colorado School of Mines, U.S.A.
Masaki Hayashi, University of Calgary, Canada
- COORDINATORS:** Sergio Martos Rosillo (IGME-CSIC)
José Benavente Herrera (UGR)
Nuria Naranjo Fernández (UMA)
Carlos Duque Calvache (UGR)
- VENUE:** University of Granada (Spain)
Science Faculty (Avd. Fuente Nueva s/n, 18071)



COURSE PROGRAM:

May 15 Introduction and characteristics of flow between groundwater and surface water Introduction Surface water -groundwater (SW-GW) interaction in the context of water resources management Basic concepts Darcy's law, equipotentials and flowlines, topographically driven groundwater flow system Physical setting Lakes, wetland, rivers and streams, coastal Scale of study and/or setting Geological setting, heterogeneity, flowpaths, time of travel
May 16 Watershed-scale exchange Vadose zone hydrology Hillslope hydrology and riparian zone Physiography related to flowpaths
May 17 Hyporheic exchange and field methods of SW-GW measurements Fluvial systems (gradients of watershed, river; meander, pool-riffle, bedform) Base flow analysis Well arrays: Local-scale hydraulic gradients and hydraulic conductivity
May 18 Field methods - continued Seepage meters Temperature-based methods for estimating SW-GW exchange flux
May 19 Lake/wetland water balance Water balance components Spread-sheet simulation of lake water balance Societal relevance of SW-GW interaction Wrap up and closing

COURSE FORMATS:

The course consists of lectures and problem-solving exercises using computer software. At the end of each lecture day, students will have the opportunity to make short presentations (15 minutes) and receive suggestions from instructors and classmates. Participants are responsible for their own travel, food and lodging expenses. Please note that we cannot assist you with travel and accommodation. The **course is in English** and it is necessary to **attend with a laptop computer**. If you are interested in registering for the course, please do so via an online registration form at:

https://docs.google.com/forms/d/1oRYPCbLotW_fHvVVqKUmSNktgFY6xE2110aFh0kRY2M/edit

For more information, please contact the instructor at hayashi@ucalgary.ca

For administration and registration issues, please contact the coordinator at nuria.naranjo.phd@gmail.com

REGISTRATION PROFILE	Registration fee (euros)
General	250 €
Member of AIH-GE	175 €
Student (no member of AIH-GE)**	200 €
Student and member of AIH-GE **	150 €

** If you are student, you can become member of AIH-GE for free getting the discount to do this course. More information in <https://www.aih-ge.org/hazte-socio/>