#shareEGU20
SHARING GEOSCIENCE
ONLINE

Groundwater dynamics in a near-stream domain: variability of flow directions and subsurface connectivity

EGU 2020 SESSION HS10.7

Enrico Bonanno
Günter Blöschl
Julian Klaus

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST

HYDRO CSI DOCTORAL TRAINING UNIT

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

Vienna Doctoral Programme on Water Resource Systems

Bonanno et al. 2020

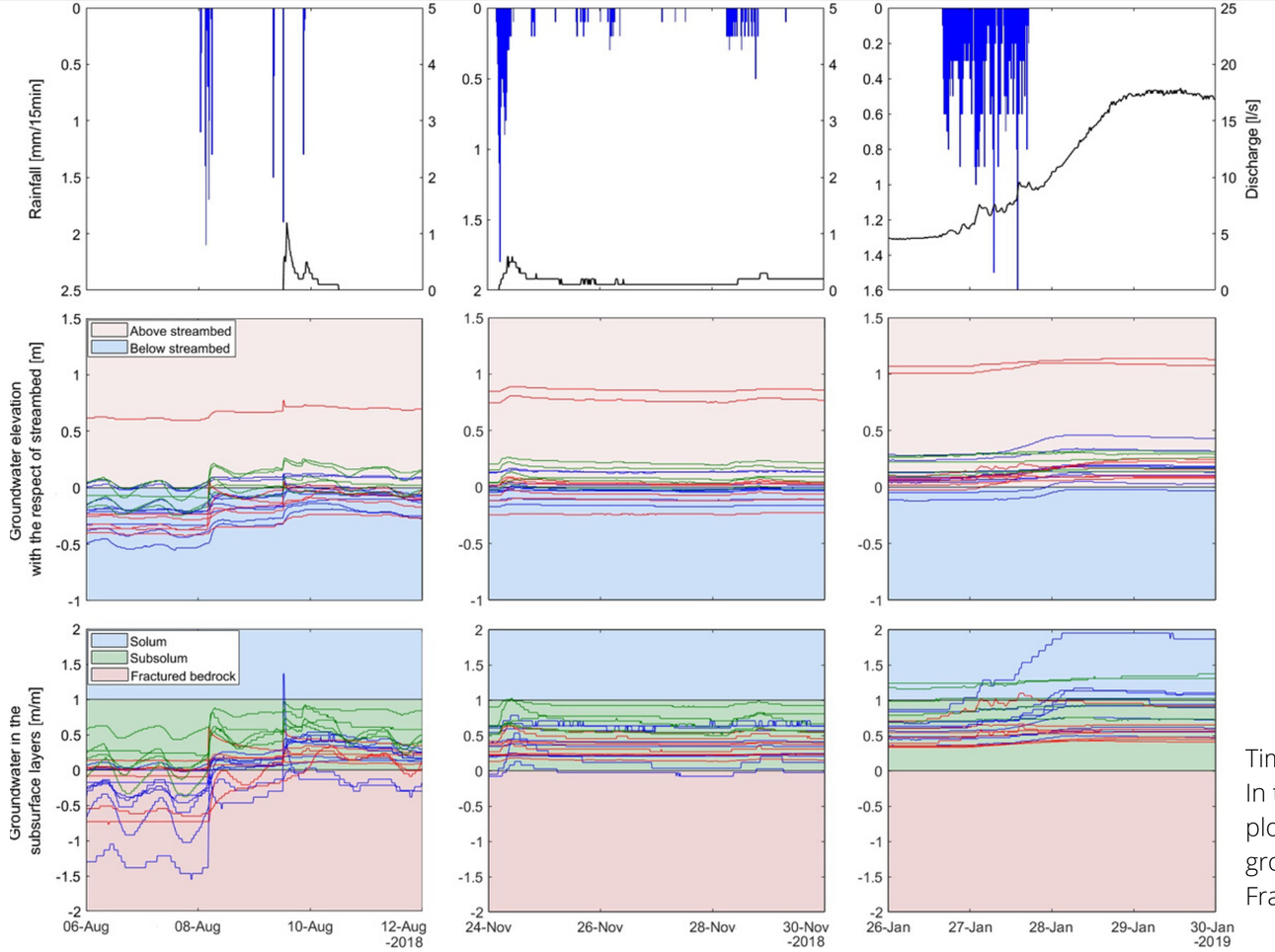
Overview

KEY TOPICS

> How does the near-stream groundwater table and flow direction change with different hydrological conditions?

> How do near-stream groundwater table and flow direction affect water-exchange with the stream?

Some Results



Where does the groundwater lay in different seasons?

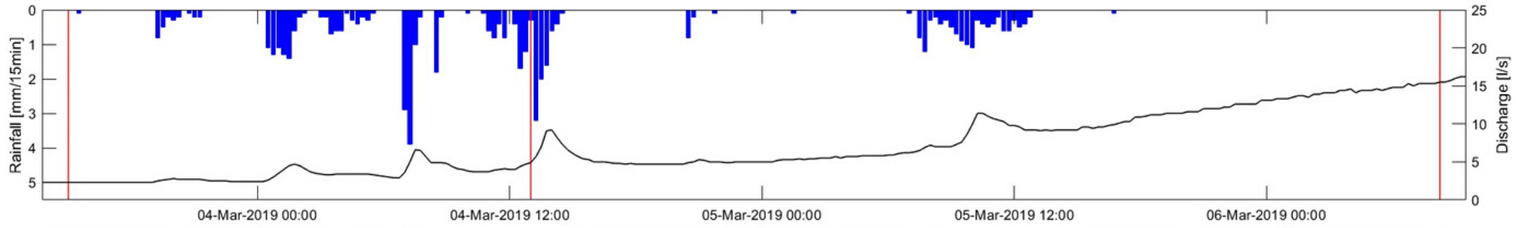
How is it variable in time?

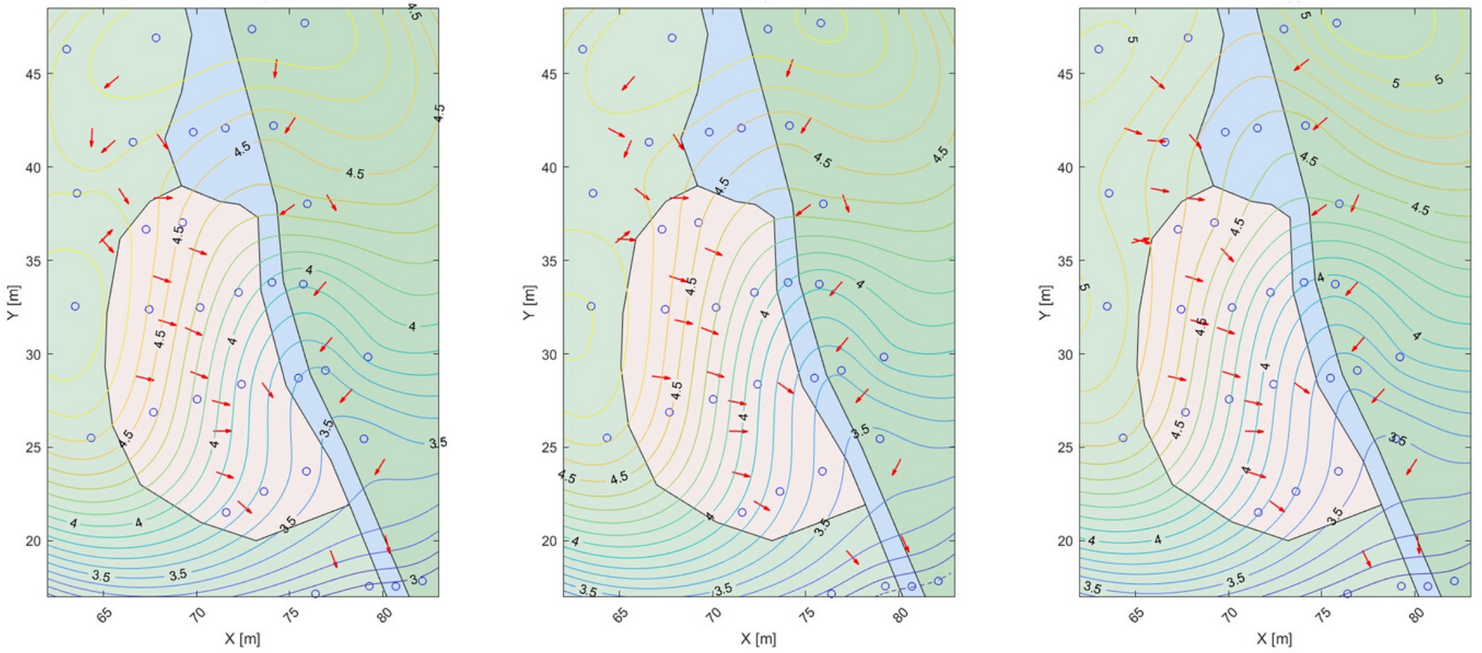
We observed groundwater elevation over 18+ months

Time series of precipitation and streamflow (first row) in increasing wetness conditions. In the second row, groundwater elevation of 22 continuously-monitored wells has been plotted with the respect of the stream channel elevation. In the third row, the groundwater elevation has been plotted with the respect of Solum - Subsolum - Fractured Bedrock, the three subsurface layers in the site.

Bonanno et al. 2020

Some Results





Where does the groundwater go?

How variable is near-stream groundwater flux direction?

Near-stream groundwater flux directions over time during Winter 2019. Fluxes partially change direction during events (from left to right) and between seasons (results not reported here).

Contact Us!

ENRICO BONANNO

enrico.bonanno@list.lu

Catchment and eco-hydrology group - Luxembourg Institute of Science and Technology (LIST)

Vienna Doctoral Program on Water Resource Systems (TU - Wien)

#shareEGU20

SHARING GEOSCIENCE ONLINE

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY | LIST

HYDRO CSI DOCTORAL TRAINING UNIT

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

Vienna Doctoral Programme on Water Resource Systems