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

EGU 2020 SESSION HS10.7

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Overview

> 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.
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).
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