UNDERSTANDING OF RESERVOIRS IN KARST: THE CASE OF VORA BOSCO CAVE (SALENTO, ITALY)

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STUDY AREA

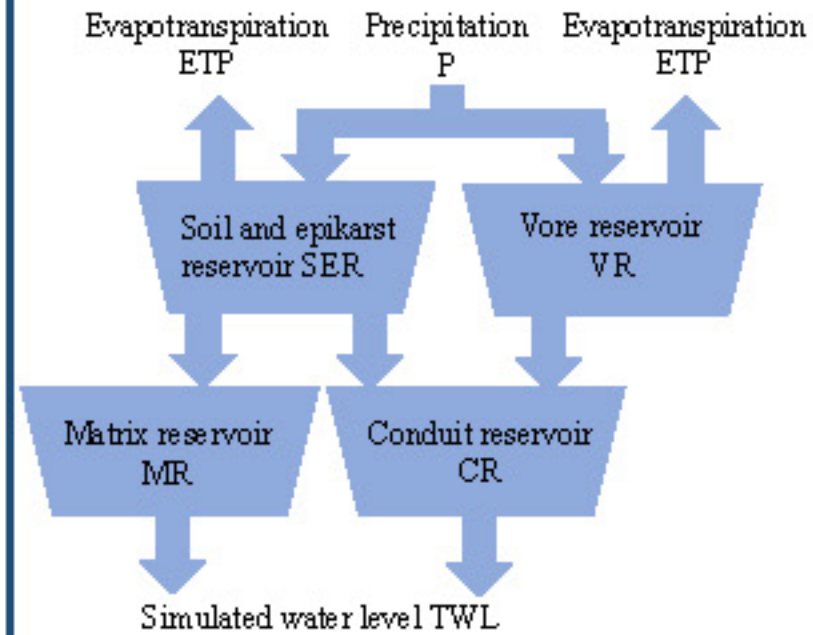
Study area location

Vora Bosco Cave

Vora Bosco profile and plan map

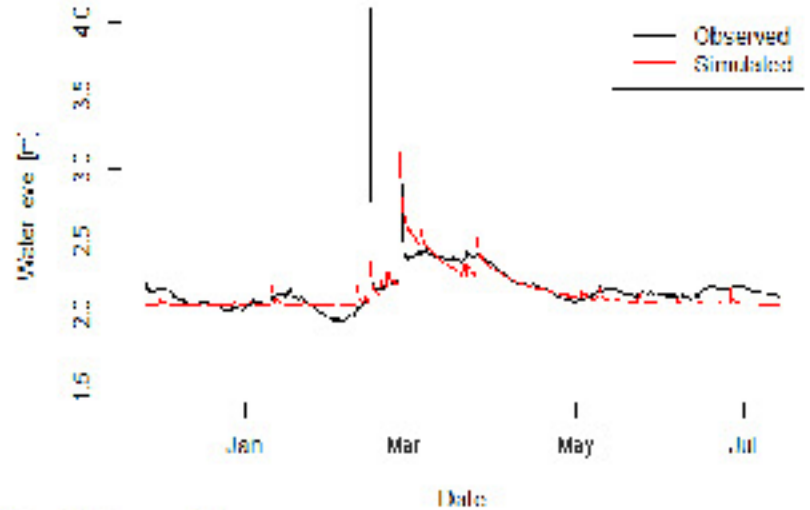
Vora Bosco cave is located on the Salento karst peninsula in Apulia in Southern Italy. Salento is surrounded by the Ionian and Adriatic Sea. The Salento groundwater is a freshwater lens, which is fluctuating on sea water. It is moving inwards due to seawater intrusion and is subjected to sea level rise as well as an increasing pressure due to high water demand, especially in the summer time for touristic purposes.

METHODS



Model structure

RESULTS



Simulation results

For all split-sample tests, Kling-Gupta efficiencies over 0.8 were achieved for the calibration and validation period.

The model simulates the water level in the Vora Bosco cave, the model inputs are daily data of precipitation and potential evapotranspiration. The Kling-Gupta efficiency was used as an objective function for calibration. Due to the short length of the time series and to avoid a split of rainy and dry season into calibration and validation period, the calibration was done by several split-sample tests.

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