



## Water budget of a shallow lake and the eco-hydrological interactions in its semi arid catchment

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In semi-arid regions, management of the limited amount of water is complicated by the unproportional demands and disturbances for the available water. Therefore, understanding the functioning of hydrological processes and interactions with the climate and ecology is of particular importance.

In this research, our first aim is getting insight into the hydrological fluxes and processes together with their spatio-temporal dynamics in the semi-arid catchment of Lake Beysehir through the help of a novel synergy between water balance modelling and remote sensing approaches. Then, it is targeted to reveal interactions of the water balance with the vegetation dynamics (both natural and agricultural production) in the region and the resultant ecological responses due to human interventions (extractions from surface and groundwater) and climate change trends.

We would like to present through this poster the temporal dynamics of hydrological fluxes, vegetation cover and climate parameters in the catchment. Also, some initial findings on the main controlling mechanisms for the lake's water balance will be shown. Further, it will be elaborated the uncertainties related with closing the water budget of the Lake Beysehir, such as handling the uncertainty of groundwater contribution and the boundary conditions due to karst dominated geology, and high spatial distribution of the precipitation (ranging spatially in between 300-1100 mm/yr) in the catchment.

The study area, Lake Beysehir catchment, is a meso-scale close catchment with a surface area of 4,100 km<sup>2</sup> located in a transition area between Mediterranean region and inner Anatolia of Turkey, and characterized by a long term average of around 400 mm/yr precipitation and karst geological conditions, while Lake Beysehir itself covers approximately a surface area of 650 km<sup>2</sup> (changing between 550 – 750 km<sup>2</sup>), with an average depth of 6m.