



## Evaluation of three global gradient-based groundwater models in the Mediterranean region

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The Mediterranean region is recognized as one of the most sensitive regions in the world to water scarcity, due to both climate change and consistently increasing anthropogenic pressures. Groundwater is considered as a strategic freshwater reserve in the Mediterranean region; however, its status remains poorly characterized and its total budget uncertain. In recent years, groundwater modelling has moved from local to regional/global scale, offering insights into the status of data-scarce regions. However, it remains unclear to what extent those models can be used to support management decisions. This study aims to compare and evaluate the performance of three groundwater models to represent the steady-state groundwater levels in the Mediterranean region. Thus, the groundwater models of Reinecke et al. (2019), de Graaf et al. (2017) and Fan et al. (2013) will be utilized in this study. The preliminary results indicate that, in the northern part of the Mediterranean region, the models of Reinecke et al. (2019) and de Graaf et al. (2017) predict similar water table patterns. However, both models simulate completely different groundwater regimes in the desert regions; the predicted groundwater table of de Graaf et al. (2017) model is significantly deeper than of Reinecke et al. (2019) model. This could be, probably, because of the calibration of de Graaf et al. (2017) model compared to Reinecke et al. (2019) model, which is not yet calibrated. A detailed comparison between simulated and measured water table depth of different Mediterranean aquifers having different climatic, geologic and anthropogenic conditions will be presented.

### References

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