Combining geology, hydrogeology and groundwater flow for the assessment of groundwater in the Zahrez Basin, Algeria

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Description
The Zahrez basin is one of the endorheic basins of the vast steppes region, which is located in central northern Algeria, about 300 km from Algiers, covering a surface area of approximately 9000 km^2. Geological, hydrogeological, hydrochemical, and groundwater flow data are integrated and used to evaluate and characterize groundwater resources and to identify the main factors controlling groundwater flow in the region. The hydrogeological characteristics of the aquifer system show that Turonian sediments form the principal aquifer in the north-western part of the study area. This aquifer is continuous with an aquifer of Miocene-Pliocene-Quaternary age on the northern flank of the Djelfa Syncline. The mean hydraulic conductivity of the Turonian aquifer is about 10^{-4} m/s. Albian sandstone sequences constitute the most extensive aquifer in the Saharan Atlas mountain range, with typical hydraulic conductivities of …