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Future Availability of Water Supply from Karstic Springs under Probable Climate Change. The case of Aravissos, Central Macedonia, Greece.

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The test site of Aravissos is located at 70 Km to the West (W-NW) of Thessaloniki at the south banks of mount Païko, in the north part of Central Macedonia
The karstic Aravissos springs supply 40% of total volume needed for the water supply of Thessaloniki, Greece. As the water is of excellent quality, it is feed directly in the distribution network without any previous treatment. The availability of this source is therefore of high importance for the sustainable water supply of this area with almost 1000000 inhabitants.
The water system of Aravissos is developed in a karstic limestone with an age of about Late Cretaceous that covers almost the entire western part of the big-anticline of Païko Mountain. The climate in this area and the water consumption area, Thessaloniki, is a typical Mediterranean climate with mild and humid winters and hot and dry summers. The total annual number of rainy days is around 110. The production of the Aravissos springs depends mostly from the annual precipitations.
As the feeding catchement and the karst aquifer are not well defined, a practical empirical balance model, that contains only well known relevant terms, is applied for the simulation of the operation of the springs under normal water extraction for water supply in present time. The estimation of future weather conditions are based on GCM and RCM simulation data and the extension of trend lines of the actual data. The future evolution of the availability of adequate water quantities from the springs is finally estimated from the balance model and the simulated future climatic data.
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