Geophysical Research Abstracts
Vol. 16, EGU2014-2071-1, 2014
EGU General Assembly 2014

Geoclima: A geographic information system for climate services

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Geoclima is an integrated web-based Geographic Information System (GIS) providing climate services to manage, analyze and visualize the information which is directly or indirectly related to climate and its future projections in Greece. It is an innovative information technology application, serving as a tool for the study of the climate and climate change in Greece and providing combined information related to the climate regime and variability with high spatial resolution over Greece. Geoclima is based on conventional in-situ and satellite measurements, climate model (RCM) simulations, as well as geographic and socioeconomic data related to climate change. The system was developed in five steps: a) climate and environmental related information was collected and homogenized, b) future climate projections were assessed based on existing regional climate model (RCM) simulations for Europe and a supplementary transient high resolution (10 km x 10 km) simulation for Greece over the period 1961-2100 using RegCM3, c) a geographic database was implemented, managing all descriptive and geospatial data that was collected or produced d) climate data was mapped and thematic web map services were created, and e) the integrated GIS was developed. The final product is an interactive open access webGIS application, through which users are able to analyze, visualize and disseminate the climate information. This paper provides an overview of the research efforts to develop the system and demonstrates the results.