



Past and future climatic changes in the Mediterranean area under various global warming scenarios

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Past climatic changes and their impacts on the natural vegetation can be used as a reference for the climatic changes projected by ensembles of climate models for the 21st century. The study of the Holocene shows that the Mediterranean has known several precipitation falls equivalent to what is projected for the end of the 21st century. These droughts were often correlated with the decline or collapse of Mediterranean civilisations, particularly in the eastern Basin. Nevertheless, while the past droughts were not characterized by particularly high temperature, future temperature increase will more or less significant according to the scenario. This will much intensify the water deficit for natural and artificial ecosystems. As a consequence, the projected climatic change can be considered as unprecedented during the last 10,000 years. We explore how they compare with the various scenarios corresponding to a 1.5°C, 2°C and 3°C global warming according to the pre-industrial mean temperature, and we will determine the degree of dissimilarity of the Mediterranean climate under these global thresholds according to the long term climate variability.