



The climate in the Venetian and North Adriatic region: variability, trends and change

workshop

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TOPIC T1. Historical climatology and past climate

The climate of the past: lessons learned from ice cores at regional and global scales

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Short abstract:

There is an urgent need to predict more accurately how global climate is likely to react to increased emissions of greenhouse gases as a result of human activities. In order to predict the future, it is necessary to determine how global climate has responded during the past to natural variations in forcing factors such as changes in solar input and in the earth's orbital parameters during climatic periods similar to the present. It is well known that millennial scale oscillation have occurred over the last 8000 years, resulting in an advance and retreat of mountain glaciers. The causes for this variability are however poorly understood and a deeper knowledge of the problem requires an integrated approach through the study of several archives and above all the comparison with previous interglacials. The difference between past interglacials, their climatic stability, as well as the interaction with polar ice sheets and with the biosphere will be addressed during this talk for a better understanding of future climate.

The most important sources of information about past climate change are derived from palaeoclimatic records such as marine sediments, terrestrial archives and polar ice cores as well as climate model. Those archives are highly complementary, giving a wealth of precious quantitative information on the understanding of the nature and causes of climate variability and change. There are a lot of ongoing international projects and frameworks aimed to better understand climate changes in general, and for interglacials in particular, to obtain an advanced understanding of climate dynamics, and to improve the simulations of future climate change and sea level rising, using information from the past.