



Past polar temperature changes : EPICA Dome C record, PMIP2 model-data comparisons

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Water stable isotope measurements have been conducted on EPICA Dome C ice core on 50 cm samples, leading to a temporal resolution varying from a few decades during the last deglaciation to a few centuries 800 000 years ago. Past changes in polar snow deuterium content are related to past changes in local temperatures. The long term EPICA Dome C record enables a comparison of the various interglacial periods. We discuss the relationships between the intensity of interglacial periods with the integrated high latitude annual mean insolation changes, associated with obliquity changes. In order to assess the spatial relevance of ice-core derived temperature changes, we compare polar temperature changes with the global temperature changes simulated by climate models, both for the past (mid-Holocene and Last Glacial Maximum, targets of the Paleoclimate Modelling Intercomparison Project) and the future (sensitivity studies to a doubling and a quadrupling of atmospheric CO₂ concentrations conducted by the Coupled Model Intercomparison Project for the IPCC assessment).