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An 800 kyr record of ice core chemistry from the EPICA Dome C ice core

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This abstract is written on behalf of the entire EPICA chemistry team. The Dome C ice core now reaches back about 800 kyr in time. The isotope record shows the familiar pattern of 100 kyr cycles, but with a much lower amplitude in the earlier part of the record than in the later. Ice core chemical records can add substantial additional information about important parameters such as sea ice, atmospheric transport, etc. In this abstract we will present (at low resolution) the 800 kyr record of ionic chemistry (sea salt, terrestrial elements, sulfate). We will look at the pattern, and also at the relationship between the chemical concentrations and the temperature signal, in particular to see if the relationship is the same in the early and late part of the record. This paper will focus particularly on ions derived from the marine environment, making inferences about past sea ice conditions and biological productivity of the oceans; these inferences will be compared to those derived from relevant marine sediment proxies. It will also make an assessment of different terrestrial proxies that might link to South American climate.