



Continuous record of atmospheric changes during the last 3000 years in Vostok, Antarctica

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For the first time, dust distribution and concentration in firn are available to reconstruct the last millennia atmospheric circulation. This work needed very clean conditions for decontamination. This was possible by the use of the whole core exceptionally available but essential, because of the porosity of the firn. This problem of contamination implied to adapt the protocol classically used for ice and imply more constraining conditions.

However this has no effect on the time scale used here because we sampled continuously along the 100 m of firn to provide a continuous record of dust concentration and distribution during the last 3000 years. This high resolution record is particularly interesting because allowed to compare with historical, meteorological data that are more complete for recent time than for Holocene or glacial-interglacial time scale.

The results are particularly interesting because provide information on the Little Ice Age in Antarctica from the atmospheric point of view. Temperature is mainly used to describe this recent cold event however is clearly not the unique important factor to take into account, to understand this climate variation. Indeed precipitation but atmospheric circulations too are part of climatic parameters.

Dust signal seems too highlight strong links with sea-ice cover and polar vortex oscillation providing a global significance of the interpretation.