



Insight of dust provenance in Antarctic ice cores from ice magnetization

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Unlike isotopic analysis, magnetic properties of airborne dust measured in ice samples cannot univocally identify their source area, however they are very sensitive, non destructive and can be thus applied to small samples from old interglacials.

They show that mineral dust aerosol underwent significant variability in magnetic properties with time and climate stages. This variability reflects a different magnetic mineralogy and concentration, and very likely it represents variation of dust source area and/or transport.

Magnetic investigation of old climate periods from Vostok and EPICA Dome C suggest for the first time that no major variability in the interglacial stages occurred in the last 800 kyr. Conversely, some interesting changes are found among glacial stages, especially from EPICA Dome C ice core. Isotopic (Sr-Nd) analyses also showed tiny differences between "dusty" glacials and "less dusty" glacials. Work is now in progress to understand the origin of these differences.