



Changes in the phase lag of dust concentration and size in the EPICA-DML ice core during the last transition

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Mineral dust measured in ice core from Antarctica provides unique information about climate variability in the past. During cold stages the dust concentration in the atmosphere as reflected in the dust flux is about 2 orders of magnitude higher than during warm stages, which is explained by higher aridity and storminess.

Within the EPICA project two deep ice cores were drilled in Antarctica, one of them in Dronning Maud Land (EDML). Here, we present a continuous record of dust concentration and size measured in the EDML ice core covering the time interval from the last glacial stage to the Holocene. We find synchronous phasing of dust concentration and size during cold stages and no clear phase relation during warm stages. Different explanations for these findings are discussed: One explanation for this is a different seasonality of active source areas and the intensity of the transport. Another explanation is the activation of additional sources during warm stages.