



## **Implications of gradual changes in Holocene Saharan landscape on North Atlantic dust deposition**

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We investigate the response of North Atlantic dust deposition to 1) a homogeneous decrease and 2) a steady southward retreat of vegetation and lakes in North Africa during the mid-Holocene using the aerosol-climate model ECHAM6.1-HAM2.2. We do not find evidence of an abrupt increase in dust deposition in response to gradual changing land cover, whereas marine sediment records along the northwest African margin indicate such an abrupt change about 5-6 ka ago. We conclude that nonlinear land surface-dust interactions and southward retreating vegetation and lakes are not the exclusive cause for abrupt dust accumulation changes in the sediment cores. Our results point to a rapid large scale retreat of vegetation and lakes in the area of significant dust sources between 20°N and 26°N.