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Peat bog Records of Atmospheric Dust fluxes - Holocene palaeoenvironmental and paleoclimatic implications for South America

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Little attention has been given to pre-anthropogenic signals recorded in peat bogs, especially in the Southern Hemisphere. Yet they are important to 1/ better understand the different particle sources during the Holocene and 2/ to tackle the linkage between atmospheric dust loads and climate change and 3/ to better understand the impact of dust on Holocene palaeoclimate and palaeoenvironments in a critical area for ocean productivity. In the PARAD project, we will explore the use of a broad range of trace elements and radiogenic isotopes (Pb, Nd, Hf) as dust proxies. Coupling these findings with biological proxies (plant macrofossils, pollen) and detailed age-depth modelling, we expect not only to identify and interpret new links between atmospheric dust chemistry and climate change. In this contribution, we will present the preliminary results on two peat records of natural atmospheric dust using the elemental and isotopic signature in Tierra del Fuego. Preliminary results on two peat sections covering the Holocene (Karukinka Bog, Chile, 8kyrs and Harberton bog, Argentina, 14kyrs) will be discussed. This encompasses density, ash content, elemental and isotopic geochemistry, macrofossil determination and radiocarbon dating. More specifically, Karukinka bog display several mineral peaks, which possible origin (soil particles, volcanism, cosmogenic dusts, marine aerosols…) will be discussed here as well as in Vanneste et al. (this conference, session Aeolian dust: Initiator, Player, and Recorder of Environmental Change).