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Holocene regional gradients of dust provenance and flux between Talos Dome and Dome C, East Antarctica.

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Aeolian sequences from Central East Antarctic ice cores provide climate and environmental information of hemispheric significance. Close to the margins of the ice sheet, high-elevation ice-free terrains protruding above the ice sheet surface can provide an additional input of fine dust particles to the atmosphere, making peripheral locations particularly interesting for the study of the regional climate evolution. In the Talos Dome area of East Antarctica, entrainment and transport of local mineral particles is merely influenced by local wind direction and strength, which in turn is tuned by regional climate changes.
We investigate the spatial variability of modern and Holocene dust flux, grain size and isotopic (Sr-Nd) composition along a hypothetic transect from Talos Dome all through the interior of the ice sheet (Dome C/Vostok area), and compare the geochemical fingerprint of dust extracted from firn and ice cores to the equivalent size fraction of regolith and glacial deposits from high altitude Victoria Land sources.
This study aims to better understand the environmental gradients of dust flux and provenance from the marginal Talos Dome site to the higher Dome C drainage area, with implications for the regional atmospheric circulation, while documenting the isotopic composition of local exposed sediments.