



Patagonian ash on sub-Antarctic South Georgia: expanding the tephrostratigraphy of southern South America into the Southern Ocean

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Fingerprinting of non-visible volcanic ash (cryptotephra) allows precise dating and correlation of paleoclimate archives across thousands of kilometres. However, the potential of this powerful geochronological tool remains under-utilized across large swaths of our planet. Here, we present geochemical (electron microprobe) and chronological (^{14}C) evidence to show that ash from a peat section on sub-Antarctic South Georgia correlates to the ~ 2950 cal. yr BP Alpehué eruption of the Chilean Sollipulli volcano. This find marks the first known tephra horizon on South Georgia and expands the tephrostratigraphy of southern South America into the Southern Ocean. Owing to its distal distribution and coincidence with a major climate transition, the presented time marker holds significant potential to constrain the spatio-temporal pattern of regional change.