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# Deglaciation of Antarctica since the Last Glacial Maximum – what can we learn from cosmogenic 10Be and 26Al exposure ages?

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Ice volume changes at the coastal margins of Antarctica during the global LGM are uncertain. The little evidence available suggests that behaviour of the East and West Antarctic Ice Sheets are markedly different and complex. It is hypothesised that during interglacials, thinning of the Ross Ice Shelf, a more open-water environment and increased precipitation, allowed outlet glaciers draining the Transantarctic Mnts and fed by interior Ice Sheets to advance during moist warmer periods, out of phase with colder arid periods. In contrast, glacier dynamics along the vast coastal perimeter of East Antarctica is strongly influenced by Southern Ocean conditions. Cosmogenic 10Be and 26Al chronologies, although restricted to ice-free oasis and mountains flanking drainage glaciers, has become an invaluable, if not unique, tool to quantify spatial and temporal Pleistocene ice sheet variability over the past 2 Ma. Despite an increasing number of well documented areas, extracting reliable ages from glacial deposits in polar regions is problematic. Recycling of previously exposed/ buried debris and continual post-depositional modification leads to age ambiguities for a coeval glacial landform. More importantly, passage of cold-based ice can leave a landform unmodified resulting in young erratics deposited on ancient bedrock. Advances in delivering in-situ radiocarbon to routine application offer some relief. Exposure ages from different localities throughout East Antarctica (Framnes Mnts, Lutzow-Holm Bay, Vestfold Hills) and West Antarctica (Denton Ranges, Hatherton Glacier, Shackleton Range) highlight some of the new findings. This talk presents results which quantify the magnitude and timing of paleo-ice sheet thickness changes, questions the validity of an Antarctic LGM and discusses the complexities encountered in the often excessive spread in exposure ages.