



The Antarctic Ice Sheet during the last Interglaciation: Insights from my Thesis

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The last interglaciation represents a period of warmer climates and higher sea levels, and a useful analogue to future climate. While many studies have focussed on the response of the Greenland Ice sheet, far less is known about the response of the Antarctic ice sheet. Here, I present the summarised results of my PhD thesis "Constraints on the minimum extent of the Antarctic ice sheet during the last interglaciation".

Firstly, I cover the timings of interglaciation in Antarctica, and their differences with respect to the Northern Hemisphere timings, based on paleo sea level indicators, and oceanic temperature records. I move on to cover climate forcings, and how they influence the ice sheet, relative to present, and early Holocene.

Secondly, I present thesis results, from looking at ice core stable water isotopes. These are compared with Isostatic and Climatic modelling results, for various different Ice sheet scenarios, as to the resulting Climate, from changes in Elevation, Temperature, Precipitation, and Sublimation, all contributing to the recorded stable water isotope record.

Thirdly, I move on to looking at the mid-field relative sea level records, from Australia and Argentina. Using isostatic modelling, these are used to assess the relative contribution of the Eastern and Western Antarctic Ice sheets. Although data uncertainties result in us being to identify the contribution from West Antarctica.

Overall, using model-data comparison, we find a lack of evidence for a substantial retreat of the Wilkes Subglacial basin. No data location is close enough to determine the existence of the marine based West Antarctic Ice sheet. Model uncertainty is unable to constrain evidence of variations in ice thickness in East Antarctica.