

In search of East Antarctic paleo-ice flow patterns in the Ross Sea during the Last Glacial Maximum: Tracing glacially derived material using $^{40}\text{Ar}/^{39}\text{Ar}$ isotopic analyses of detritus

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Abstract: Constraining the paleo-dynamics of Antarctica's glaciers provides a context for understanding how they might behave in future warming scenarios. The proposed work is to add $^{40}\text{Ar}/^{39}\text{Ar}$ dating of detrital grains to an existing arsenal of provenance data from the Ross Sea. The Ross Sea is situated between the East and West Antarctic Ice Sheets and receives ice flow from both sides. The East Antarctic Ice Sheet is considered to be more stable; however, evidence is emerging that glaciogenic sediments within the central Ross Sea have a very strong East Antarctic contribution. A better characterization of the provenance of Ross Sea glaciogenic sediments will help our understanding of the ice sheets and their ice streams as well as contributing a data set that can be directly compared to emerging ice rafted detritus provenance data around the Antarctic perimeter.