



Oceanographic Control on Exchange between the “Cold” Ross Ice Shelf Cavity and the Western Ross Sea: Haskell Strait

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The Ross Ice Shelf Ocean Cavity, at a volume of around 125,000 km³, is one of the largest and least explored ocean regions of the Antarctic coastal margin. Ice Shelf Water (ISW) flowing out from the cavity on the Coriolis-favoured western side of the cavity flows either side of Ross Island. To the east of the island is the zone most often associated with the Ross Sea Polynya and typically thought of as the dominant exit pathway. Haskell Strait is the largely ice-covered, and lesser understood, connection between the two water bodies to the south of Ross Island. In particular, this flow path, the so called Victoria Land Coastal Current, interacts with numerous smaller shelves and floating glaciers. Here we consider available data and simulations to seek answers to (i) Is there exchange flow within the Strait? (ii) What are the implications for sea ice once ISW passes through the Strait and finally (iii) is ISW flow through the Strait of any significance compared to other exit pathways? We synthesize data from various campaigns over the last decade, along with ROMS cavity circulation modelling, and project out to contributions from up-coming initiatives.