

## **Snow and Ice Research Group – New Zealand: Monthly video seminar**

### **Sea ice and supercooled seawater: preliminary observations from a winter watching sea ice grow in McMurdo Sound, Antarctica**

**Dr Andy Mahoney, University of Otago**

Each winter, the growth of sea ice around Antarctica effectively doubles the area of the continent. Its horizontal expansion is well observed by satellite data, but our understanding of the way in which Antarctic sea ice thickens is incomplete, particularly in coastal regions where floating ice shelves make up approximately half of Antarctica's coastline. Interaction between the ocean and these shelves at depth leads to supercooling of the seawater, which in turn interacts with the sea ice away from the ice shelf edge. These processes are not considered in most global climate models and yet they are thought to contribute approximately 10% to the total growth of sea ice over large areas affected by the circulation underneath ice shelves. A better understanding the link between ice shelves and sea ice growth requires detailed simultaneous observations of the sea ice and ocean beneath it, which requires spending a winter on the ice. Here we present preliminary results from the 2009 winter in McMurdo Sound during which we monitored the thickening of the sea ice cover and the heat flux through it. At the same time we collected oceanographic data from beneath the ice, which capture the transition from summer to winter conditions in McMurdo Sound and the arrival of supercooled water from beneath the Ross Ice Shelf. Through this work, we hope not only to improve our understanding of the wintertime growth of Antarctic sea ice, but also to reveal the potential scope for winter field research in Antarctica.

**Tuesday 10 November 2009, 1pm-1:50pm**

All interested are welcome to attend.

Video meetings are held every month over the Access Grid. Video rooms are sited at most universities. The locations of the video conference rooms for each campus are:

Massey: Room 4.40, Social Sciences Tower, Massey University, Palmerston North.

Auckland: Room 429, SGGES (The School of Geography, Geology and Environmental Science), University of Auckland, Auckland.

Canterbury: Room 164, Level 1, Geography-Psychology Building, Canterbury University, Christchurch

Otago: Teaching Facilities South West corner, Information Services Building

Victoria: Library RB106



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