



# Solar Radiation and the Antarctic Sea Ice Environment

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Physics Lecture Theatre 1, Sandy Bay Campus, University of Tasmania

## ABSTRACT:

Around the Antarctic continent, the sea temperature in winter drops below the freezing temperature, creating a surface layer of sea ice. While it can extend over 1000 km from the coast in some areas, this sea ice cover is restricted to a few hundred kilometres in breadth in the East Antarctic, where the Australian Antarctic program is concentrated. Far from being smooth and even, the sea ice is a highly variable environment, changing rapidly in both space and time.

The nature of sea ice (and its snow covering) controls the way that solar radiation arriving on its upper surface is transferred through the ice and into the underlying water, and therefore characterises the radiation environment for the biological systems which are present. In order to understand variability in this radiation environment, particularly at ultraviolet wavelengths, it is useful to both conduct measurements and to make model estimates.

This talk will introduce the audience to the wonders of the sea ice environment, and then outline some techniques to determine the amount of radiation to which Antarctic sea ice ecosystems are exposed, and in the process try to convey some of the beauty and majesty of the seas to our south.

## SPEAKER PROFILE:

Kelvin Michael is a graduate of the University of Tasmania, with a BSc in physics and mathematics, an Honours degree in radio astronomy, followed by a PhD in climatology and satellite remote sensing from the School of Geography & Environmental Studies. He worked as a research scientist in ionospheric and ocean surveillance radar at the Defence Science and Technology Organisation (DSTO), before accepting a lecturing position with the Institute of Antarctic and Southern Ocean Studies (IASOS). Two years ago, IASOS was merged with other parts of the University to form the Institute for Marine and Antarctic Studies (IMAS), and Dr Michael currently holds a position as a senior lecturer in IMAS.

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