science webinar series

Australia's boundary current pathways to the deep ocean

Tuesday 22 October 2019, 2:30-3:30 pm (AEDT)
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The ocean has absorbed 93% of global warming heat. This service by the ocean to life on Earth has not been without consequence. The oceans are warming rapidly, ocean species are being displaced and sea level rise threatens many coastal communities.

The pathway for heat to enter the deep ocean is primarily through dense water formation in the North Atlantic and around Antarctica. This large-scale conveyor from the surface to the deep ocean is known as the Meridional Overturning Circulation.

Improvements in sustained observing of the ocean and high-resolution model simulations have allowed us to focus on smaller scale, but important, pathways to the deep ocean. In particular, the boundary currents along Australia's western and southern coastlines play an important role in funnelling surface waters into a deep circulation that carries heat into the Indian Ocean.

Researchers in the Earth Systems and Climate Change Hub, in partnership with Australia's Integrated Marine Observing System and international efforts, are providing detailed understanding of the contribution of Australia's boundary currents to the global Meridional Overturning Circulation.

In this webinar, Helen Phillips from the University of Tasmania will begin with an introduction to the ocean's role in the climate system, and how it draws down heat from the atmosphere. She will then zoom in on new understanding of the Leeuwin Current and South Australian Current systems, and their role in the global ocean circulation.

Dr Helen Phillips is a Senior Research Fellow in Physical Oceanography at the Institute for Marine and Antarctic Studies, University of Tasmania. She is a contributor to the Earth Systems and Climate Change Hub **Project 5.7: Tracking ocean change – ocean observations and models**. Helen is a sea-going oceanographer with 20 years of experience in observing and interpreting ocean variability to understand the physical mechanisms at work and their impact on the climate system.

The Earth Systems and Climate Change Hub science webinars are open to anyone interested in finding out more about the Hub's research (noting that the content may assume some understanding of climate change science and the fields being discussed).