

Center for Environmental & Applied Fluid Mechanics

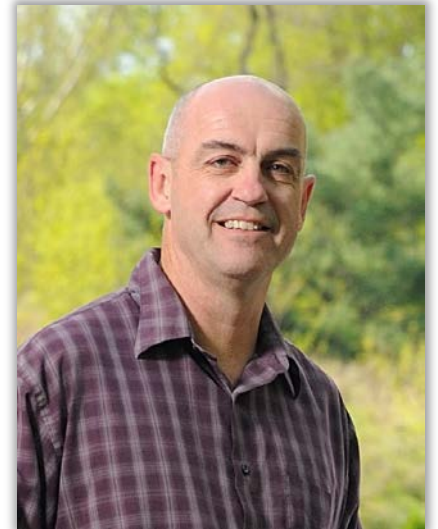


“Polar Vortices: Earth, Mars, and Beyond”

Prof. Darryn Waugh
Johns Hopkins University
Earth & Planetary Sciences

A common feature of the atmospheres of terrestrial planets, including Earth, Mars, Venus and Titan, is the existence of polar vortices (strong circumpolar winds at mid- and high latitudes). These polar vortices are the location of unique chemical and dynamical processes that have a global impact on these planets. Here, I will discuss a series of studies examining the dynamics and transport of polar vortices on Earth, (modern and paleo) Mars, Titan, and hypothetical planets.

Bio: After obtaining his BSc in Mathematics at the University of Waikato, New Zealand in 1986, Professor Darryn Waugh went on to receive his MSc at Waikato in Mathematics in 1988. He was then awarded his PhD at the University of Cambridge, UK in 1992, after which he pursued postdoctoral work at MIT, USA and Monash University in Australia. Since 1998, he has worked at Johns Hopkins University, where he became Professor at the Department of Earth and Planetary Sciences in 2004. Professor Waugh’s main research interests are oriented toward understanding dynamics and transport in the atmosphere and oceans. Research in the atmosphere focuses on stratospheric and upper tropospheric dynamics/transport. Improved understanding of, and ability to model, fluid motions in these regions is important for understanding the distribution of trace constituents, such as ozone, and for assessing the impact of human activities on the atmospheric environment. In recent years he has also become interested in the transport in oceans and lakes, and the uptake of anthropogenic carbon.



Fall 2023 CEA FM Seminar Series

November 3, 2023 ✦ 3:00 PM ✦ Hodson Hall 210