Weekly CEAFM Seminar: Spring 2015

JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Date: **Friday, February 20, 2015**

Time: 11:00 AM

Location: Gilman Hall # 132

Speaker: **Dr. William Seviour** (Earth and Planetary Sciences at JHU)

Title: ***"Extreme variability of the stratospheric polar vortex"***

Abstract

The winter stratosphere is dominated by a strong cyclonic vortex which encircles the pole, acting to confine cold air to high latitudes. In about 2/3 of winters this vortex breaks down in an event known as a sudden stratospheric warming (SSW). Research over the past two decades has established a link between SSWs and surface weather, such as an increased likelihood of extreme cold events over North America and Northern Europe. However, significant uncertainties remain in understanding the dynamics of SSWs and their surface influence.

In this talk, observational and modelling data are used to investigate two classes of SSWs; vortex splits and displacements. In many studies no distinction is made between these events, but they are shown to exhibit very different dynamical behaviour. Different surface anomalies following spits and displacements are used to inform the mechanism by which the stratosphere influences the troposphere, and implications for seasonal weather prediction discussed.

Abstract

Will Seviour is a postdoctoral researcher in the Department of Earth and Planetary Sciences at Johns Hopkins. Before coming to Hopkins, he studied for a PhD in atmospheric physics at the University of Oxford, and spent some time working at the UK Met Office. He is interested in atmospheric dynamics, particularly the coupling between the stratosphere and troposphere.