



## Variability of the Brewer-Dobson circulation during Stratospheric Sudden Warmings

Victor Manuel Chavez-Perez (1), Laura de la Torre (1), Juan Antonio Añel (1,2), and Luis Gimeno (1)

(1) EPhysLab, Facultad de Ciencias, Universidade de Vigo, Ourense, Spain, (2) Smith School of Enterprise and the Environment, University of Oxford, Oxford, UK

In this work we look for changes in the latitudinal distribution and intensity of the vertical branch of the Brewer-Dobson Circulation during the formation and development of the Stratospheric Sudden Warmings. Therefore we analyze the vertical component of the Transformed Eulerian-Mean residual circulation ( $w^*$ ,  $v^*$ ) from the lowermost stratosphere to the mesosphere. We use daily data from the ERA-Interim reanalysis and simulations with high vertical resolution performed with the Whole Atmosphere Community Climate Model (WACCM).

Preliminary results show that, in the stratosphere, strong negative anomalies appear at high latitudes around 20 days before the wind reversal. Thereafter, they shift to lower latitudes following the vortex, giving way to strong positive anomalies at high latitudes. In the lowermost stratosphere and in the mesosphere corresponding anomalies are also found.

Associated to the positive anomalies at high latitudes, a weakening of the equatorial ascending branch of the Brewer-Dobson Circulation is found in the stratosphere. This equatorial signal is not so clear in the model as it is in the reanalysis.