



SPARC Workshop SHARP2016

Differences in the detection and classification of the Stratospheric Sudden Warming over the three reanalyses for the period 1979-2014

Victor Manuel Chavez Perez¹, Dr. Mohamadou Diallo¹, Prof. Laura de la Torre Ramos¹, Junior Prof. Juan Antonio Añel Cabanelas²

¹ EPhysLab, Faculty of Sciences, University of Vigo, Ourense, Spain.

² EPhysLab, Faculty of Sciences, University of Vigo, Ourense, Spain and SSEE, University of Oxford, Oxford, UK.

vm.chavez.p@uvigo.es

The extreme variability of the stratospheric polar vortex during winter due to the stratospheric sudden warming (SSW) are found impacting the tropospheric weather (Mitchell et al., 2013). These impacts are much pronounced during the split events of the polar vortex leading to downwards propagation of the vortex, in turn, affecting the surface pressure (Seviour et al., 2013).

Here we investigate how often are different the detection and classification of the SSW in the three reanalyses data sets ERA-Interim, MERRA and JRA55 for the period 1979-2014. We use the traditional SSW definitions (see Charlton and Polvani, 2007) for the detection and the method developed in Seviour et al., (2013) that allows an automatical classification of the events in splits or displacement.

The preliminar results show that there are some significant differences in the number of detected SSW events by using a same method.

A further analysis on the discrepancies, even for the same event, in different datasets is shown.

A further analysis concerning how the vortex splitting or displaced events are different for a same given event and as well as why are these discrepancies occur in the three reanalyses, will be shown