Geophysical Research Abstracts
Vol. 15, EGU2013-912-1, 2013
EGU General Assembly 2013

Analysis of high pressure blocks over Europe in the GEM-Climate model - current climate simulations

Magdalena Porebska (1), Malgorzata Zdunek (1), Joanna Struzewska (1), and Jacek W. Kaminski (2)

(1) Warsaw Univerity of Technology, Environmental Engineering, Warsaw, Poland (magdalena.porebska@is.pw.edu.pl, 4822 6254305), (2) Centre for Research in Earth and Space Science, York University, Toronto, Canada

Atmospheric blocking situations have a pronounced impact on the zonal flow. Changes in the frequency of high-pressure blocks can lead to long-term changes in the direction and movement of low and high pressure systems over Europe. Knowing the tendency of the occurrence of high- pressure blocks could help in predicting the type and magnitude of departures from the current regional climate. Thus, changes in meteorological conditions (in particular, extreme weather) over Europe could be anticipated. The most important question is whether the observed anomalies have a transient character or reflect a tendency linked to the climate change. The best way to answer this question is to use a climate model.

The main goal of the proposed work is to study high pressure blocks over the Northern Atlantic and Europe and to evaluate a 10 year current climate simulation done with the GEM-Climate model. The model will be run a uniform global grid at 1.5 x 1.5 deg horizontal resolution. Assessment of high pressure blocks will be based on the blocking index detection algorithm proposed by Schalge (2011). Blocking index calculated from 10 years of daily 500 hPa geopotetnial fields from the ERA-Interim reanalysis project with spatial resolution 0.75 x 0.75 deg will be used to assess the performance of the GEM-Climate model. Analysis will be done for different seasons and sub- regions. Also, synoptic analysis for several high pressure blocks will be presented.