Balanced Flow on the Spinning Globe

Peter Lynch School of Mathematical Sciences University College Dublin

Irish Meteorological Society 20 November 2014

One of the most remarkable features of the Earth's atmospheric circulation is the persistent nature of its circulation patterns. The long time-scales of extra-tropical depressions and anticyclones is due to the influence of the rotation of the Earth on the dynamics of the atmosphere.

We will discuss several types of balance and examine the dynamics underlying them. The Coriolis effect will be considered in some depth. Finally, we will illustrate the importance of balanced data for numerical weather prediction.