



Atlantic weather regimes as preferred locations of the eddy-driven jetstream

T. Woollings

University of Reading, Walker Institute, Dept. of Meteorology, Reading, United Kingdom (t.j.woollings@rdg.ac.uk)

Much of the low-frequency atmospheric variability over the North Atlantic arises because of north-south shifts of the eddy-driven jetstream. With this in mind a method is developed to identify the latitude of the jetstream on any given day from the low-level wind field. In winter the distribution of jetstream latitude exhibits marked multimodality, suggesting that there are three preferred locations of the jetstream, or regimes. These three regimes are in good agreement with the results of several previous studies which attempt to identify flow regimes from maps of geopotential height or pressure. The emergence of these regimes in such different methods of analysis is testament to their robustness. Furthermore the method used here is motivated by dynamical considerations, and provides clear physical insight into the mechanisms underlying regime behaviour. Output data from a coupled GCM is analysed and shown to exhibit the same basic regime structure, although with startling errors in the relative loading of regimes.