



## **The Prediction of Extratropical Storm Tracks by the ECMWF and NCEP EPS**

**L. S. R. Froude**, K. I. Hodges and L. Bengtsson

Environmental Systems Science Centre, University of Reading, UK  
(lsrf@mail.nerc-essc.ac.uk)

The prediction of extratropical cyclones, by the European Centre for Medium Range Weather Forecasts (ECMWF) and the National Center for Environmental Prediction (NCEP) Ensemble Prediction Systems (EPS), has been investigated using an objective feature tracking methodology to identify and track cyclones along forecast trajectories. Statistics have been produced to determine the rate at which the position and intensity of the forecasted storm tracks diverge from the analysed tracks as a function of forecast lead time. Results indicate a higher level of predictive skill for the position of extratropical cyclones than their intensity and show that there is a larger spread (greater uncertainty) in intensity than position. Overall the results show that the ECMWF EPS has a slightly higher level of skill than the NCEP EPS in the northern hemisphere. In the southern hemisphere however, NCEP has higher predictive skill than ECMWF for the intensity of the cyclones. The spread in the ECMWF EPS is larger in the southern hemisphere than in the northern hemisphere, but this is not the case for the NCEP EPS. The ECMWF control forecast has consistently  $1/2$  a day more skill than the perturbed members for both position and intensity, however the ensemble mean has a higher level of skill than the control forecast for intensity from the 3 day lead time. Other factors such as ensemble size, potential forecast skill and high amplitude storms have also been explored. The analysis approach provides direct information on the cyclones and how well they are predicted and therefore provides a good measure of the ability of NWP to predict the weather.