

LATEST RESULTS ON THE ASSIMILATION OF GPSRO DATA AT THE MET OFFICE AND ECMWF

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The talk will focus on the latest results of forecast impact experiments from the Met Office and ECMWF using COSMIC radio occultation data. The Met Office first went operational with CHAMP data from GFZ in September 2006, recently COSMIC data from UCAR has started being assimilated. We currently use a 1D refractivity observation operator in a 4D-VAR system rejecting RO data below 4km and above 27 km. Experiments were run to show the impact of the data on the Global Unified Model (a model with a horizontal resolution of ~ 40 km and 50 vertical levels up to 63km) for the winter period 2006. The results showed a general improvement in mean error and root mean square error compared to observations (radiosondes and surface measurements). Largest improvements were seen in upper troposphere temperature, geopotential height, relative humidity and wind speed, the largest effects were seen in the southern hemisphere as expected. The talk will also cover improvements made by using latitudinal dependent observation errors, altering the cut-off heights and the observed changes in model bias after RO assimilation. A discussion of the increments seen in model fields and the average effects over the trial period due to RO will be shown. The pertinent results of the assimilation of RO in ECMWF's 4D-VAR system using their 1D bending angle operator will be presented too.