



GPS radio occultation assimilation experiments using two-dimensional observation operators

S. Healy

ECMWF (sean.healy@ecmwf.int, Fax 44 118 949 9161)

Assimilation experiments with one-dimensional observation operators have clearly demonstrated that CHAMP GPS radio occultation measurements contain useful temperature information in the upper-troposphere and lower-stratosphere. However, demonstrating a positive impact in the lower-troposphere has proved more difficult. Nevertheless, it is hoped that the use of improved receivers - such as GRAS on METOP - and the implementation of new processing techniques will improve the quality of observations in the lower-troposphere. Therefore, the use of accurate two-dimensional (2D) observation operators needs to be investigated. ECMWF has recently modified its assimilation system to enable the use of 2D observation operators, and two 2D bending angle operators have been implemented. The 2D bending angle observation operators will be described and results from the first forecast impact experiments will be presented.