

ASSIMILATION OF GPS RO OBSERVATIONS AT NCEP

Lidia Cucurull*(1)

(1) NOAA/NWS/NCEP/EMC

NCEP is currently assimilating GPS RO observations from the COSMIC, METOP/GRAS and GRACE-A missions in its Global Data Assimilation System. The data has been shown to be a very significant component of the global observing system, reducing biases associated to our model and increasing the anomaly correlation score for the mass fields. The benefits are more significant in the Southern Hemisphere extratropics, where the overall number of observations available for operational assimilation is lower.

Parallel tests indicate that saturation in model skill has not been reached yet with the existing GPS RO constellation. Consequently, real-time delivery of GPS RO products from existing and future missions is highly desirable.

On the algorithm side, more accurate forward operators are necessary in our assimilation system to fully exploit the information contained in these observations. NCEP is currently assimilating profiles of refractivity but work towards assimilation of rawer products is underway.

During this presentation, a summary of the different satellites being used operationally and preliminary results on accuracy of additional RO instruments will be discussed. The talk will also include some review of the different forward operators being considered for operational implementation. Finally, a summary of the ongoing RO-related activities at NCEP will be presented.