

**SSEC/CIMSS  
Seminar**

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**The Development of Hyperspectral  
Infrared Water Vapor Radiance  
Assimilation Techniques in the  
NCEP Global Forecast System**

Techniques to assimilate the Atmospheric InfraRed Sounder (AIRS) and the Infrared Atmospheric Sounding Interferometer (IASI) water vapor channels into the National Centers for Environmental Prediction's (NCEP) Global Forecast System have been examined. There are several problems which must be resolved in using these water vapor channels. In general, the non-linearity of the water vapor channels makes them difficult to assimilate. Channels which have significant dependencies on water vapor in the stratosphere are not yet used in most Numerical Weather Prediction systems and are currently not modeled well by the NCEP Global Forecast System.

We have conducted with some success, initial experiments focused on using water vapor channels which provide information in the troposphere and in the stratosphere. By adjusting the data thinning we assimilate those observations which result in less initial adjustment to the moisture field. The instability associated with the water vapor channels is therefore reduced. However, over time, they have a significant impact on the moisture field in the Troposphere and Stratosphere. Some preliminary results are shown.

**Monday, 22 June 2009**

**11:00 a.m.**

**Room AOSS 351**