Operational hyperspectral remote sensing sounding capabilities at NESDIS started with the launch of
the AQUA Atmospheric InfraRed Sounder (AIRS) in May 2002, and will continue through out this
decade with EUMETSAT’s Infrared Atmospheric Sounding Interferometer (IASI) and NPOESS
Cross-track InfraRed Sounder (CrIS). The advantage of high spectral resolution in the infrared is
very clear. In addition to vastly improved accuracies and vertical resolution of temperature and
moisture soundings, and improved impacts in NWP, high spectral resolution provides the capability to
derive trace gases such as ozone, carbon dioxide, carbon monoxide, methane, sulfur dioxide and other
key climate parameters such as clouds and aerosols. NESDIS is generating many of these products
from AIRS in real-time for both weather and climate applications. Using the AIRS retrieval system
as a benchmark, NESDIS/ORA is developing the NOAA operational IASI processing system and the
NOAA-unique CrIS processing system. The software system will be able to process soundings and
cloud-cleared radiances from AIRS, IASI or CrIS using the same science for all three instruments.
Using the same science (e.g radiative transfer, cloud correction, etc) is critical for deriving climate
data records and blending different datasets. At the meeting, we will give an overview of the
operational processing plans (including distribution) for AIRS, IASI and CrIS, and also will show the
accuracy of our different products, which will include temperature, moisture, cloud cleared radiances,
and trace gases. The products will be validated against model analyses and radiosondes. We will
show the impact of using MODIS to improve AIRS cloud clearing, and we will also compare
simulated clear radiances from NCEP and ECMWF model with AIRS observed clear radiances (to
show which model agrees better with the observed radiances).
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