

Preliminary validation of the CrIMSS (ATMS/CrIS) physical retrieval approach

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Unified Retrieval (UR)

AER's UR physical algorithm concept, first applied and tested with DMSP Block 5D3 sensor suite, is used as the basis for the NPOESS CrIS and CMIS EDR algorithms.

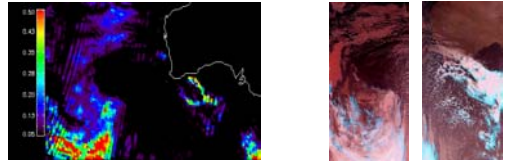
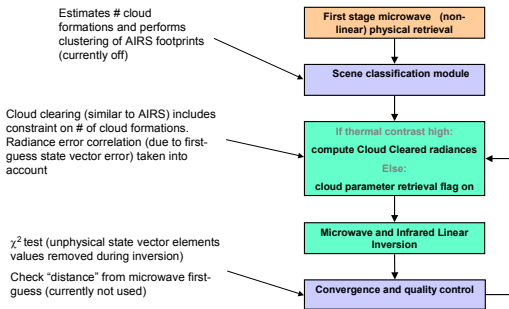
Ongoing parallel efforts to validate and improve microwave and infrared spectroscopy (LBLRTM, MonoRTM) and to enhance/tune retrieval approach (and quality control of its product) over wide range of conditions.

Focus on impact of clouds and atmospheric/surface inhomogeneities, treatment of surface emissivity/reflectivity, trace gases and tracking instrumental errors.

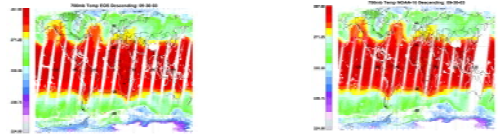
Following data is automatically processed and analyzed on daily basis:

- NOAA (AMSU-A and B) (Global)
- EOS AMSU/AIRS (selected regions)
- Future extension to SSMIS (Global)

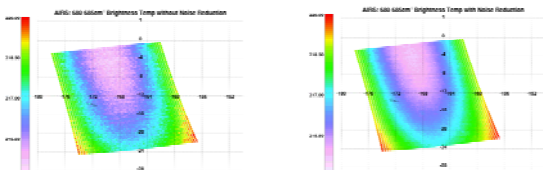
UR Algorithm components



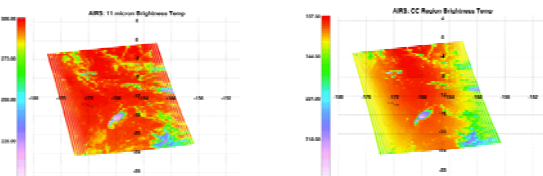
EOS/AMSU-AIRS



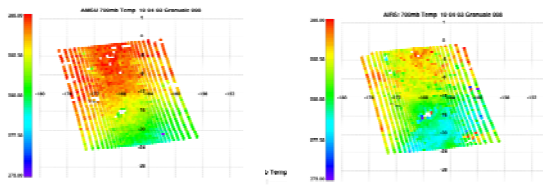
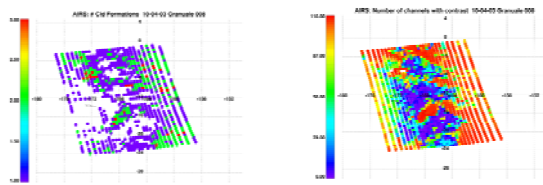
NOAA vs. EOS AMSU retrieval



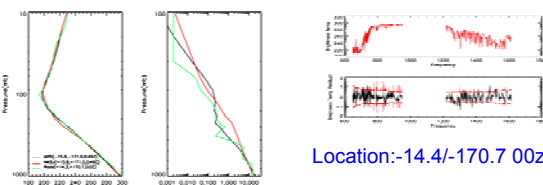
Noise Filtering



Number of cloud formations High CC contrast regions



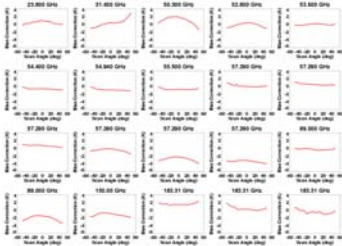
AMSU-AIRS temperature retrieval differences



RAOBs comparison

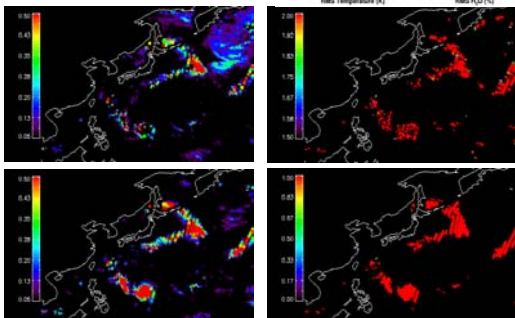
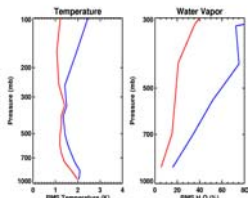
NOAA-16 AMSU-A and B processing

NCEP MRF vs. AMSU mean differences



RAOBs comparison

1 year of global (ocean) cloud free" data (8000 quality controlled NOAA-AMSU matchups)



Comparison of AMSU CLW/ precipitation detection with NOAA products

Location:-14.4/-170.7 00z