HEDAS cloud analysis

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HWSS post-processing
JHT supported development HRD and CIMSS;
Collaboration with EMC/HWRF modeling and NHC diagnostics groups

- HWSS: **HW**RF **S**atellite **S**imulator
  - Uses community Radiative Transfer Model (CRTM)
  - Prepares HWRF GRIB1 or Netcdf forecast data for CRTM including full microphysics
  - Simulates Visible, Infra Red and Micro Wave radiance (converted into Tb)
  - Output also includes cloud microphysics properties such as optical depth, effective radius and number concentration, as well as matching T and q data
 - Implemented with real-time HEDAS-2012

HEDAS produces cloud analysis due to cycling and updates via restart file capability
## Example : Isaac 2012
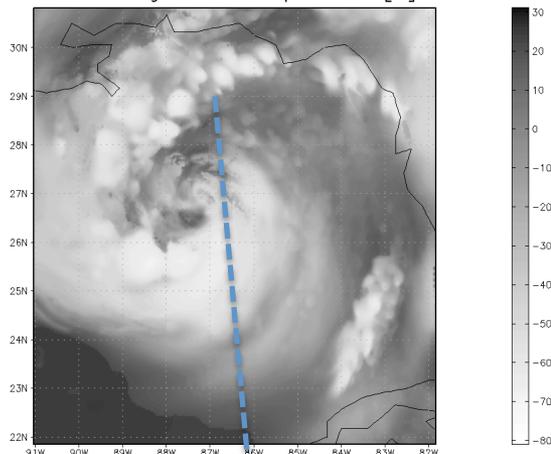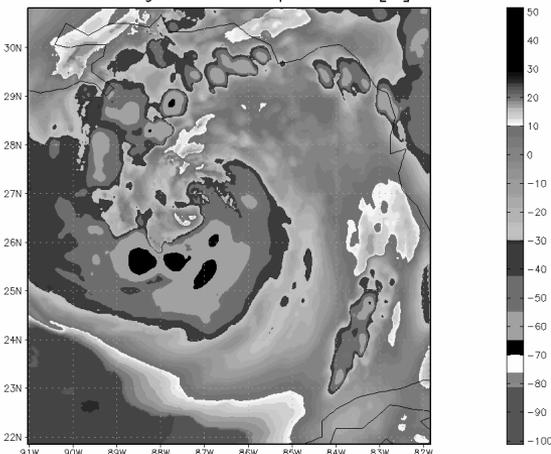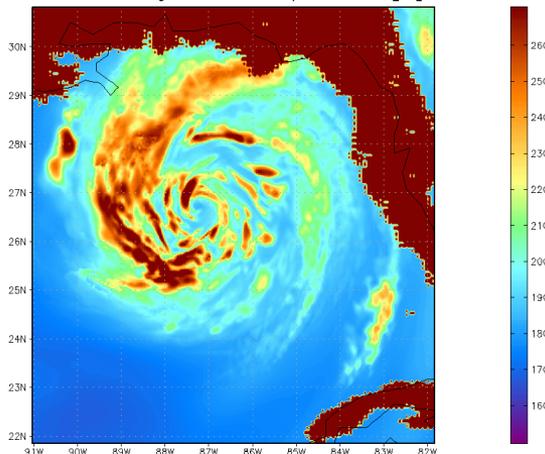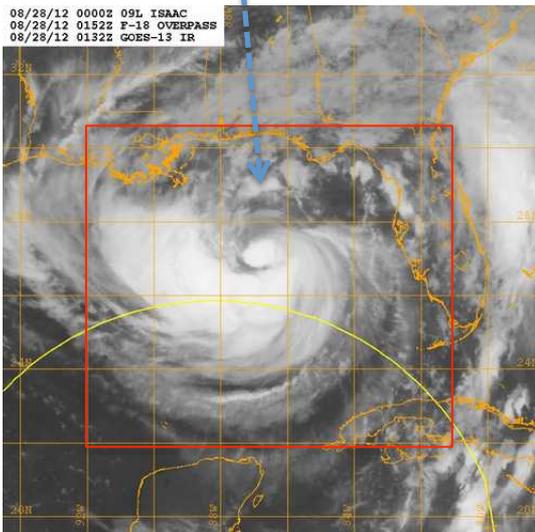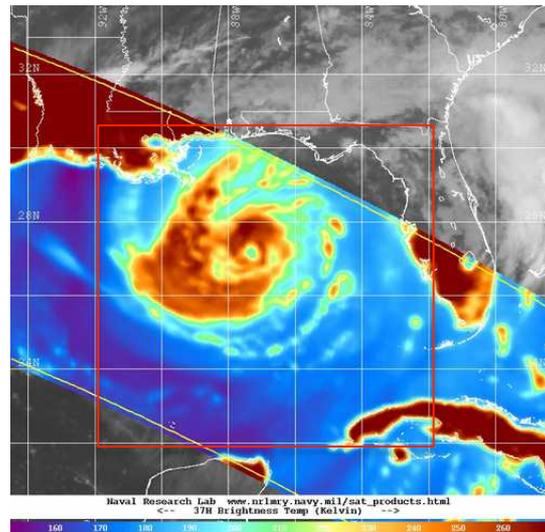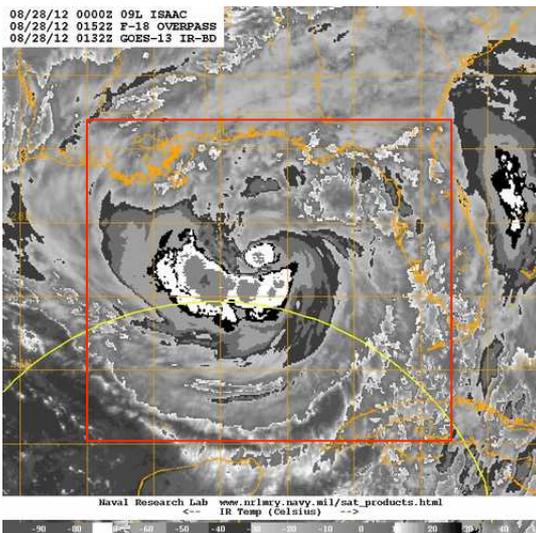
Conclusions and future work

- Nonlinear forecast cycling with use of restart file enables adjustment of microphysics that is not explicitly updated in HEDAS analysis step

- Next steps:
  - Verification of analysis and forecast using satellite observations
  - Test use of principal component retrievals in HEDAS in cloudy conditions
    - Collaboration with JPL group