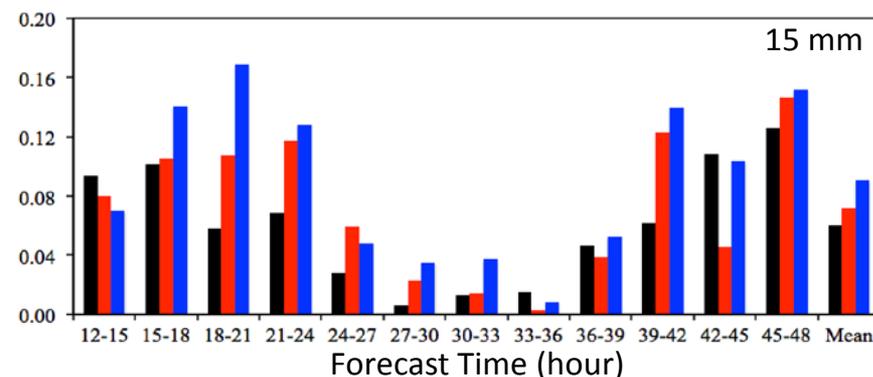
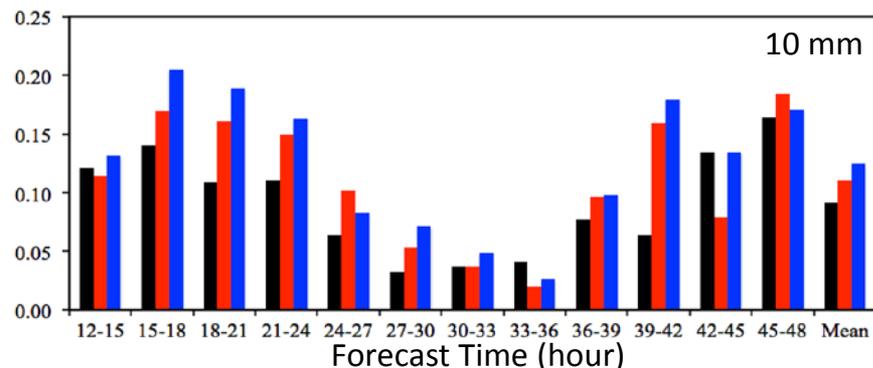


Assessment of GOES-R ABI Level 1B Radiances for NWP Applications

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Aiming to NOAA's goal to build a "Weather-Ready Nation", this project focuses on the GOES-R3 project topic area of "Improving Operational Environmental Prediction", by exploiting benefit of high temporal resolution data expected from GOES-R. Developed GOES-R ABI data assimilation algorithms will be provided to NCEP for real time forecast test.

- Direct assimilation of GOES imager radiances has shown positive impacts on QPFs, mainly because the imager radiances over coastal ocean provide key information of both temperature and water vapor
- This project will improve the performance of CRTM in simulating GOES-R ABI radiance in both clear-sky and cloudy conditions by timely updating the CRTM ABI transmittance model, implementing new ice cloud model
- The cloud mask (CM) algorithms from GOES-R AWG have been fully assessed with AHI data and will be further modified to identify GOES-R ABI cloud-affected scenes more accurately
- In order to realize the full benefit of high resolution GOES-R ABI data, a new data thinning algorithm will be developed in GSI
- Forecast experiments of direct assimilation of ABI radiances will be conducted through NCEP operational NWP models



CONV AHI IR channels AHI non-WV IR channels

Equitable threat scores (ETS) for the 3-h accumulative rainfall amounts at the thresholds of 10 and 15 mm during the 12-48 hours forecasts, which are initialized at 0000 UTC 2 July 2016, from the CONV and AHI data assimilation experiments.

Direct assimilation of AHI can improve QPFs.