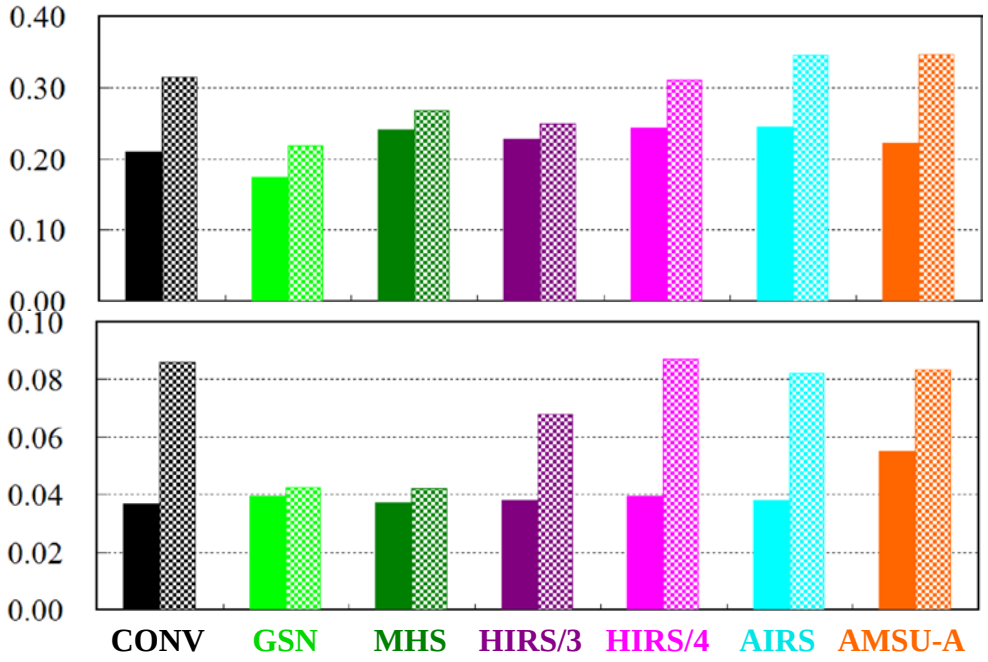
Improving Coastal Precipitation Forecast through Direct Assimilation of GOES-R ABI Radiances in GSI-NAM/HWRF

- Direct assimilation of GOES-11, 12, 13 and 15 imager radiances has been ongoing since 2010
- Forecast impacts on coastal QPFs has been overwhelmingly positive, mainly because the imager radiances over coastal ocean provide key information of both temperature and water vapor
- So far, only 10-km resolution ARW models and overly thinned data to 40-km resolution over the CONUS have been used
- FY14-15 R3 project will extend the direct assimilation of GOES radiances in GSI-NAM/HWRF
- Resolutions of both the models and data thinning will be increased, which involves development of new algorithms for cloud detection, data thinning and quality control



The average 3-hour threat score at 1 mm (top panel) and 15 mm (bottom panel) thresholds from 0000 UTC to 2400 UTC May 23, 2008 of forecasts without (solid bars) and with (dashed bars) GOES imager data added to conventional data and different types of satellite data.

GOES-R imager data assimilation algorithms will be provided to NCEP for real time forecast test.

F. Weng (STAR/NESDIS), X. Zhou (FSU) and V. Tallapragada (NCEP/EMC)