

Improvements to QPE using GOES visible ABI and model data

PIs:

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Objective:

Improvements to ScaMPR (Self-Calibrating Multivariate Precipitation Retrieval):
The GOES-R Rainfall algorithm

- High resolution visible cloud structure
- Cloud-top phase and particle size derived from GOES imagery
- NWP model data

Milestones: Year 1

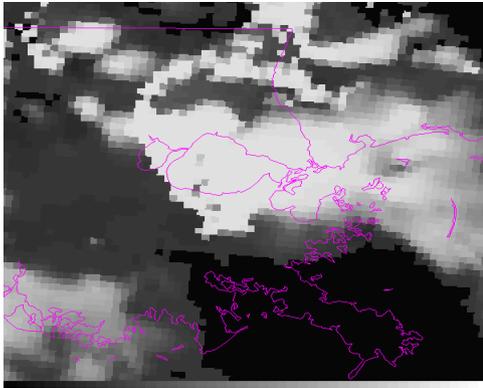
- Obtain SCaMPR software and modify for introduction of new variables.
- Collect initial case studies (current GOES and NMQ; SEVIRI and NIMROD data).
- Perform enhanced analysis of visible cloud structure for input to SCaMPR
- Extract archived cloud-model output and simulated imagery.
- Perform statistical analysis of added value of new parameters with SCaMPR.
- Compare results with observed and simulated GOES data.

Milestones: Year 2:

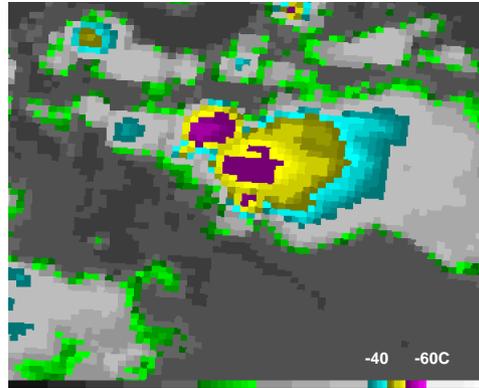
- Extend the analysis completed in year 1 to independent cases for further testing of SCaMPR.
- Setup real time processing of with current GOES data for evaluation of QPE accuracy in site specific areas such as the Tar basin of North Carolina.
- Document and submit results for publication

Use of visible and NSSL-WRF stats in QPE: 24 Aug 22:45 UTC

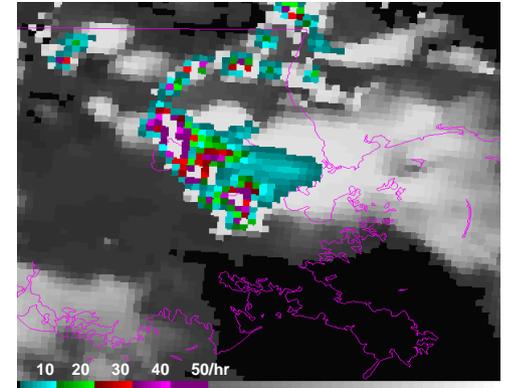
WRF: Visible



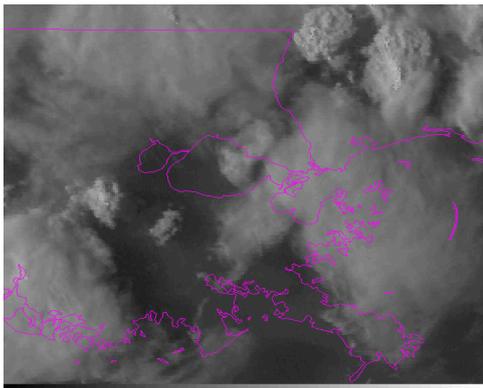
WRF:IR Band 13



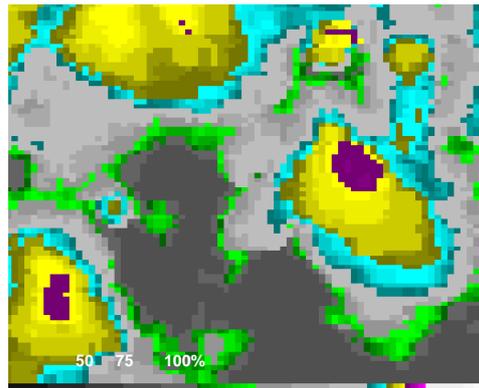
WRF: Rain Rate (R)



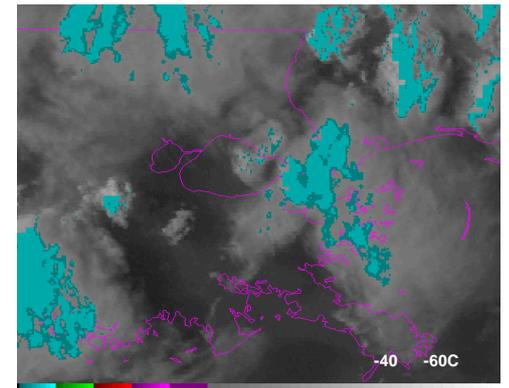
G13: Vis



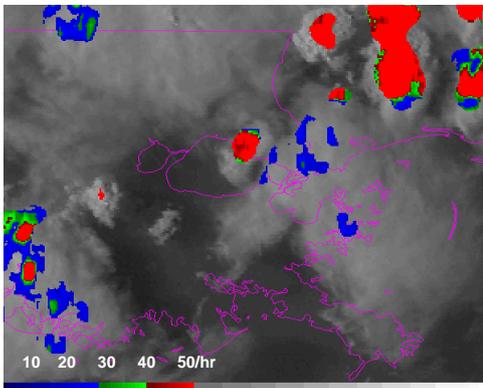
G13: IR Band 4



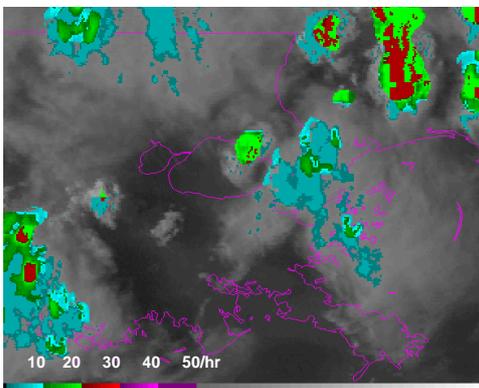
R: WRF stats



G13: Overshoot probability



R: WRF+overshoot stats



R: radar NMQ

