

Developing Machine Learning Models for ABI and Passive Microwave Observations

Vesta Afzali Gorooh, Veljko Petkovic, Malar Arulraj, Ralph Ferraro

Objectives:

- Data Integration Framework (LEO & GEO satellites, NWP)
- Application of U-Net-like (CNNs) Model for High Spatiotemporal Resolution Precipitation Estimation

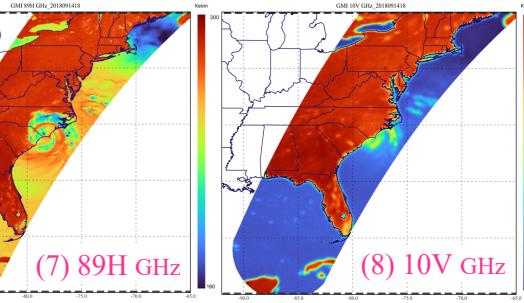
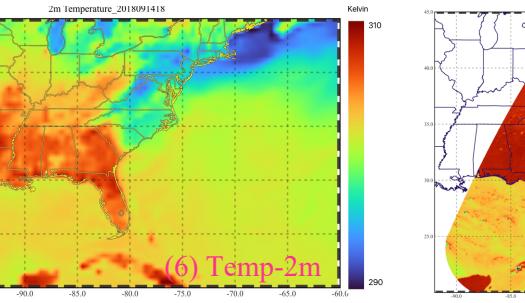
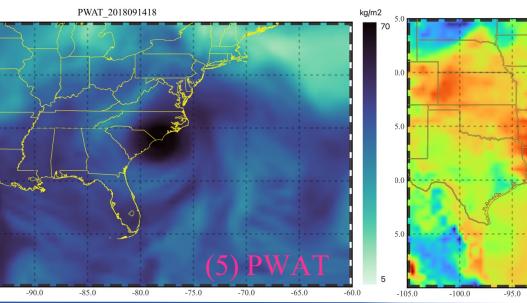
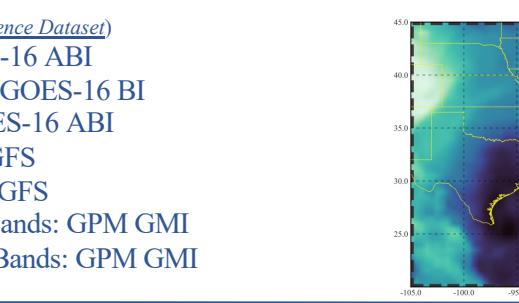
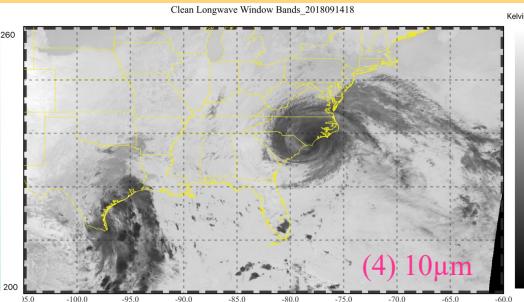
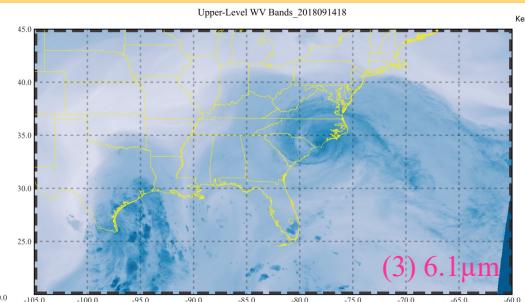
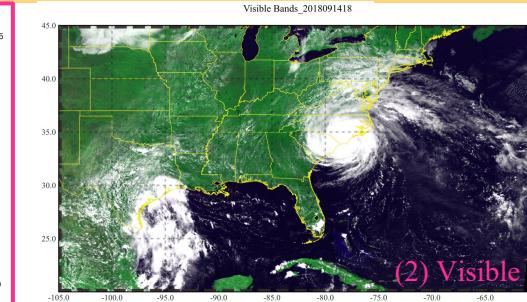
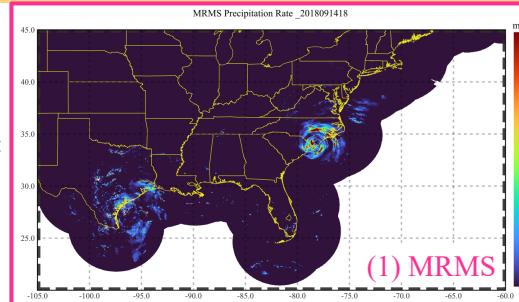
- Demonstrate Capabilities of our Proposed Model over Different Precipitation Types
- Demonstrate Capabilities of our Proposed Model over Different Surface Types

Study Area :

-105°W:-60°W, 20°N:45°N

Spatiotemporal Resolution:

~2 km, 2 mins
May–Sep. 2017–2019



Datasets:

- 1) GV-MRMS Products (Reference Dataset)
- 2) Visible (0.47–0.86 μm): GOES-16 ABI
- 3) Near-Infrared (1.37–7.37 μm): GOES-16 BI
- 4) Infrared (8.44–11.21 μm): GOES-16 ABI
- 5) Total Precipitable Water: GFS
- 6) 2-m Surface Temperature: GFS
- 7) PMW: Emission (<37GHz) Bands: GPM GMI
- 8) PMW: Scattering (>37GHz) Bands: GPM GMI

