Applications of Concurrent Super Rapid Sampling from GOES-14 SRSOR, Radar and Lightning Data Bob

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Abstract

The GOES-14 satellite was operated in Super Rapid Scan Operation for GOES-R (SRSOR) mode on several days during both 2012 and 2013 for the purpose of demonstrating the value of simultaneous high temporal observations (1-minute intervals) from radar, satellite and lightning sensors. The goal of the proposed project is to make use of the currently available GOES-14 Super Rapid Scan data in order to assess and further enhance the utility of the high temporal sampling to be available on GOES-R.

We propose to demonstrate a prototype "combined" analysis system using data from the GOES-14, MPAR and/or TDWR Doppler radar, and LMA and Earth Networks flash rate data at 1-minute intervals. From the available data, we plan to explore the importance of 1-minute continuity in the identification and tracking of boundaries from radar and visible satellite imagery and their possible influence on convective initiation and interaction with existing convection.

The time continuity of overshooting tops, lightning height and frequency, precipitation intensity, and significant weather events (radar detected mesocyclones, hail signature, etc.) also will be investigated. One emphasis will be to quantify the improvements in determining the maxima/minima and temporal trends of overshooting tops that will be provided by the 1-min frequency of satellite imagery from GOES-R.

All the GOES-14 SRSOR GVAR data have been saved at the SSEC Data Center. Any gaps in NOAA's Comprehensive Large Array-data Stewardship System (CLASS) data archive for GOES-14 SRSOR data can be filled by the SSEC Data Center.