GOES-R ABI channel differencing used to reveal cloud-free zones of 'precursors of convective initiation'.

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NOAA Goal: One of the primary goals of Weather-Ready Nation is to save lives by increasing the nation's ability to (1) respond to and (2) recover from weather related natural disasters. ***User operational application:*** Identify where convective initiation may occur in cloud free skies.

FY17 Deliverables:

- Two color tables, one with colors and one with grey shades, for AWIPS-2.
- VISIT training.
- Presentation at a GOES-R Science Meeting.

FY18 Deliverables:

- Improved product that includes the GOES-R baseline Clear Sky Mask and blended BPW.
- VISIT training.
- Presentation at a GOES-R Science Meeting.

FY17-19:

- Provide semi-annual progress reports and contribute to CIRA's annual report.
- Present research results at GOES-R Science Meetings.

Probable pathway to operations

- Year 1 will be to configure AWIPS-2 and NAWIPS to calculate and display the product of the 10.35-12.3 difference.
- Years 2-3, as enhancements and improvements to the product are developed, they will be transitioned to NWS operations in a similar fashion: by providing any changes for the next official AWIPS-2 release.

Highlight:

- GOES-R future baseline products related to convection focus on convective initiation and on the probability of severe convection. Both products require pre-existing cumulus clouds. The main objective of this project is to fill in an important missing piece of the convective timeline: Where are convective clouds expected to form over the next few hours?

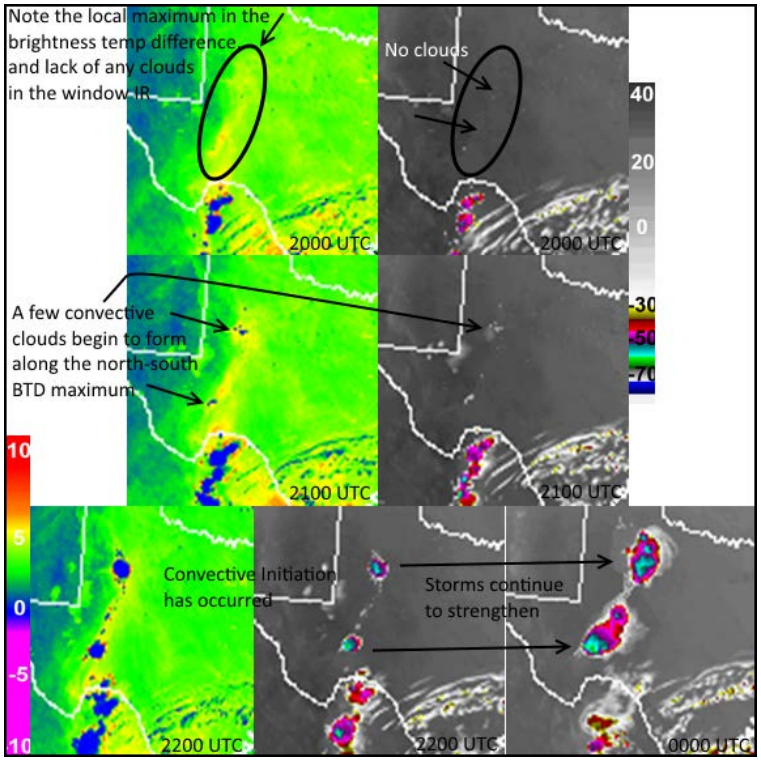

Figure 1: Synthetic GOES-R ABI imagery from the 4 km NSSL WRF-ARW that was initialized on 0000 UTC 6 April 2012. Shown is the 10.35-12.3 µm channel difference from the 20, 21, and 22 hour forecast (left column) and corresponding synthetic images at 10.35 µm (right column). In addition, the 0000 UTC image is displayed at the bottom right. Units on the legends are degrees C. Annotations show the features of the interest in the simulation.