

Toward a Definition of Texas Coastal “Streamer” Showers

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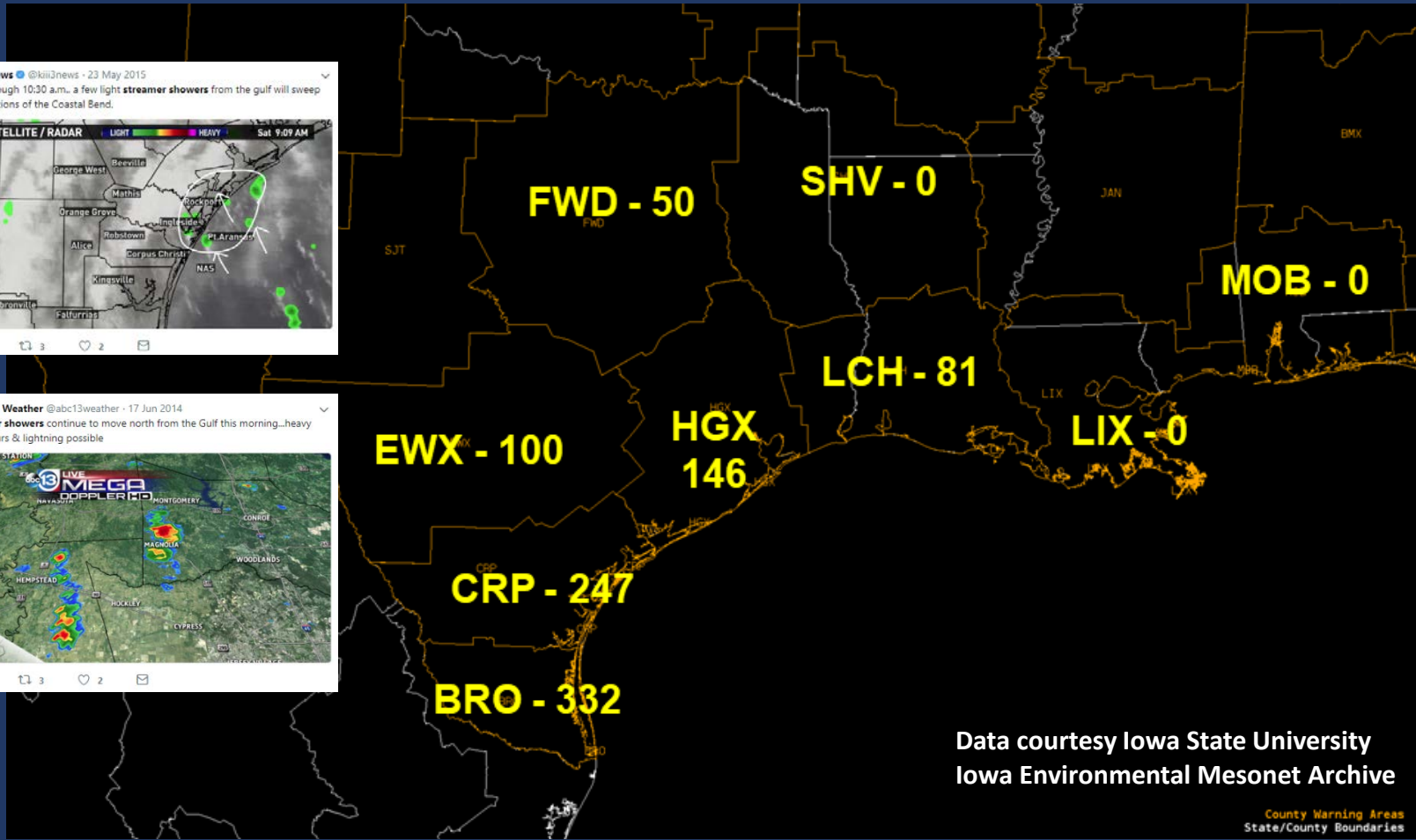


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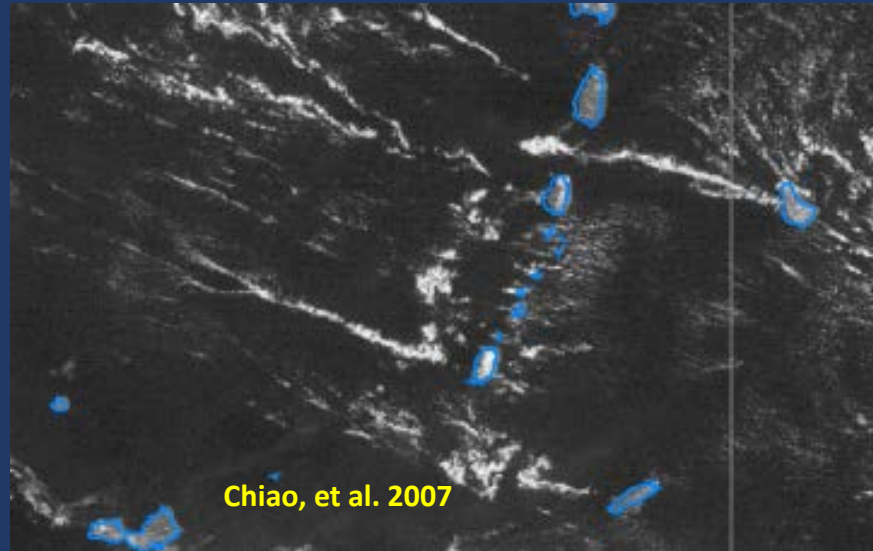
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“Streamer shower” appeared in NWS AFD’s **900+** times in 2017.



But what does it mean?

- “**Streamer shower**” not defined in *AMS Glossary of Meteorology*
- A few references in the literature to streamer clouds/showers that form in the lee of islands:

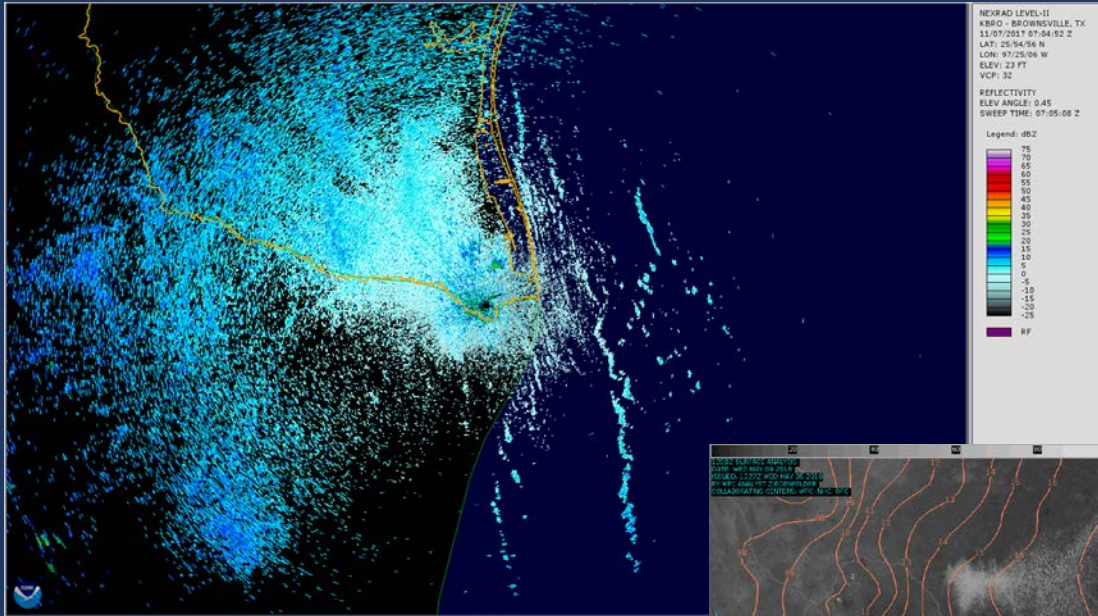


Chiao, et al. 2007

From an online search:

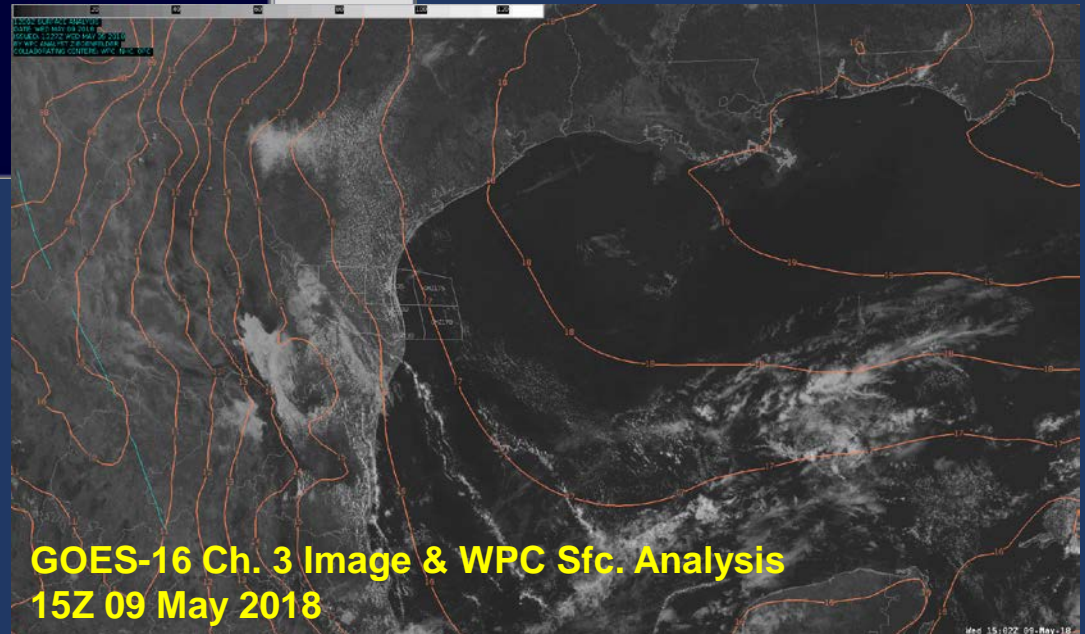
These showers are called **streamer** showers, which is very light rain that doesn't get much development and usually dissipates within a few hours, said Clay Anderson, a meteorologist with the National Weather Service.

Long, narrow, twisting appearance in satellite and radar imagery.

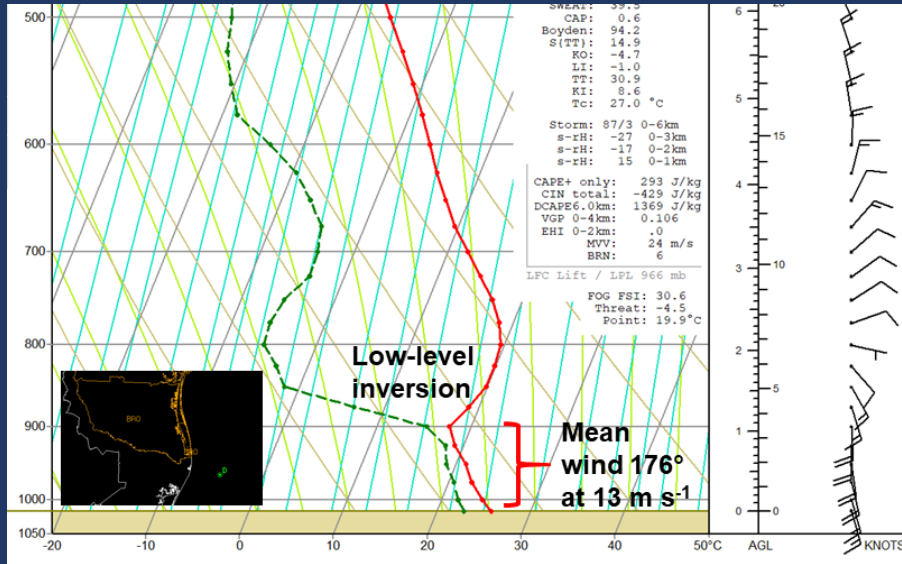


**KBRO NEXRAD
07-15Z, 07 Nov 2017**

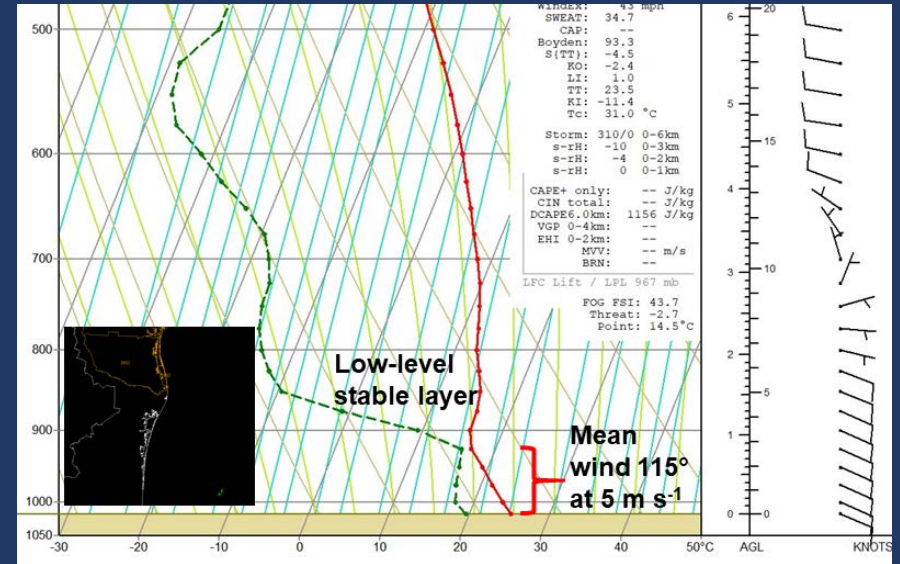
**Some morphological
similarity to lake-effect
snow bands and trade-
wind showers!**



Cloud elements “stream” from SSE to NNW with the mean boundary-layer flow.



**RAP Analysis Sounding
 13Z 07 Nov 2017**

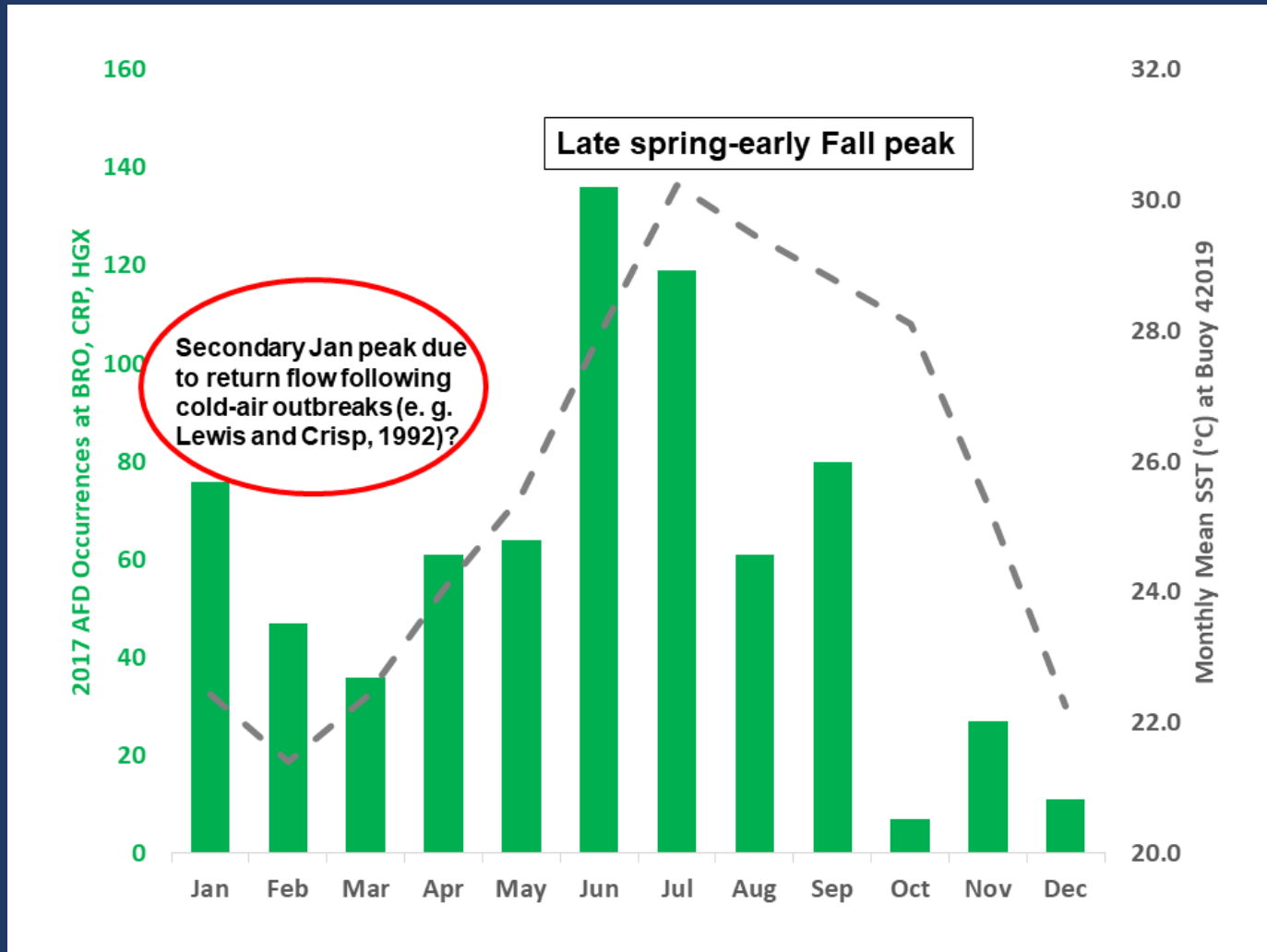


**RAP Analysis Sounding
 14Z 09 May 2018**

Steep low-level lapse rates and elevated wind speeds consistent with increased heat/moisture flux and BL roll convection.

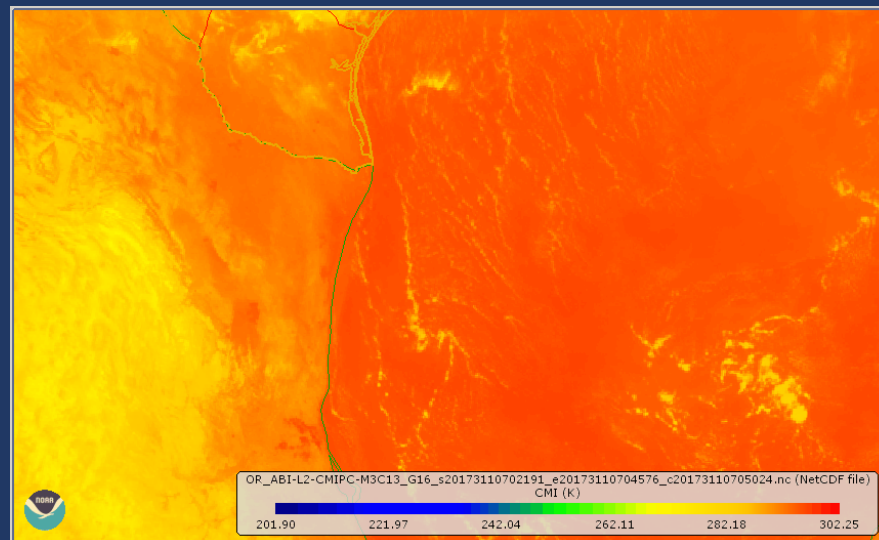
How do you build a climatology without a definition?

Back to the AFD's...

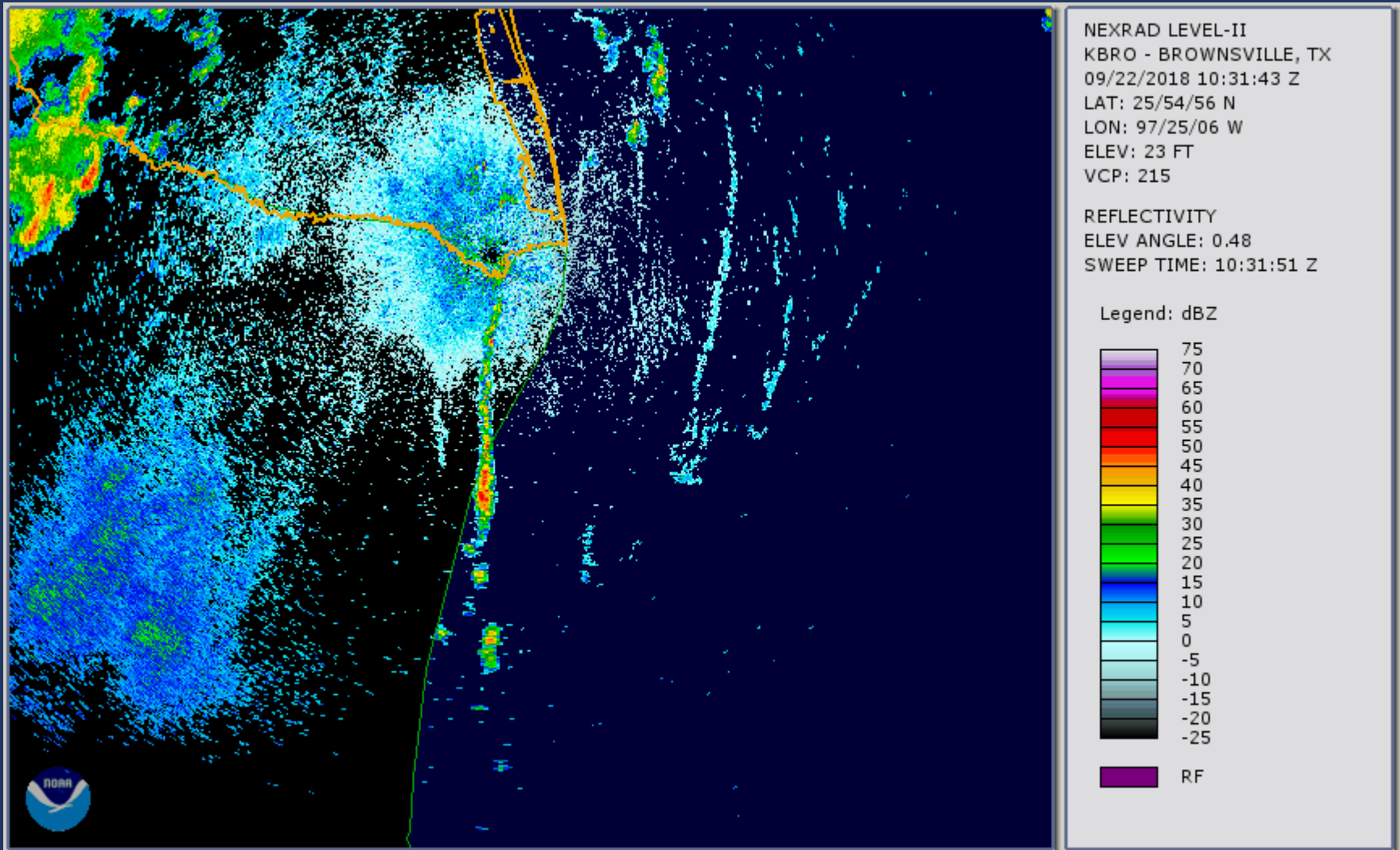


Why should anyone care?

- Can be difficult to forecast, especially when/if they will move over land.
- Vertical development can be *enhanced* with deeper moisture and lower stability
 - Brief downpours and lightning strikes
 - Can persist for 6-8 hours



Enhanced streamer in pre-frontal environment: 22 Sep 2018



Conclusions & Future Work

- **Western Gulf streamer showers**
 - Long (up to 100's of km), narrow, twisting appearance in radar/satellite imagery
 - Cloud elements moving with mean BL flow
 - *Usually* a low-level capping inversion
 - Some correlation with annual SST cycle
- **Build a climatology to assist new forecasters**
 - Multiple years of radar data, strength/position of Gulf high, composite soundings, etc.
 - **Poll experienced regional forecasters**
 - Request a definition by AMS?



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