Weekly Report

RAMMB / CIRA
Cooperative Research Program Division (CoRP)
STAR/NESDIS
National Oceanic and Atmospheric Administration (NOAA)

Submitted by: Austin Boone
Prepared by: RAMMB/CIRA contributors
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Products and Applications

Soliton Waves: GOES-16 ABI captured soliton waves beneath the ocean surface northeast of northern South America in the tropical Atlantic. Below is a GeoColor image from 9 September 2021 at 12:00:22 UTC from GOES-16 ABI. In the image, the soliton waves appear as dark linear segments oriented southeast to northwest and are regularly separated approximately 150 km. A loop of the GeoColor imagery shows the waves propagating to the northeast; please see loop here: https://rammb.cira.colostate.edu/ramsdis/online/loop.asp?data_folder=loop_of_the_day/goes-16/20210910000000&number_of_images_to_display=150&loop_speed_ms=100. More information about this phenomenon may be found in a publication by Lindsey et al. (2018; https://doi.org/10.1016/j.rse.2018.02.018). (POC: Lewis Grasso, Steve Miller, Dakota Smith; CIRA, and Dan Lindsey, NOAA: Lewis.Grasso@colostate.edu, Steven.Miller@colostate.edu, Dakota.Smith@colostate.edu, Dan.Lindsey@noaa.gov) Funding: GOESR

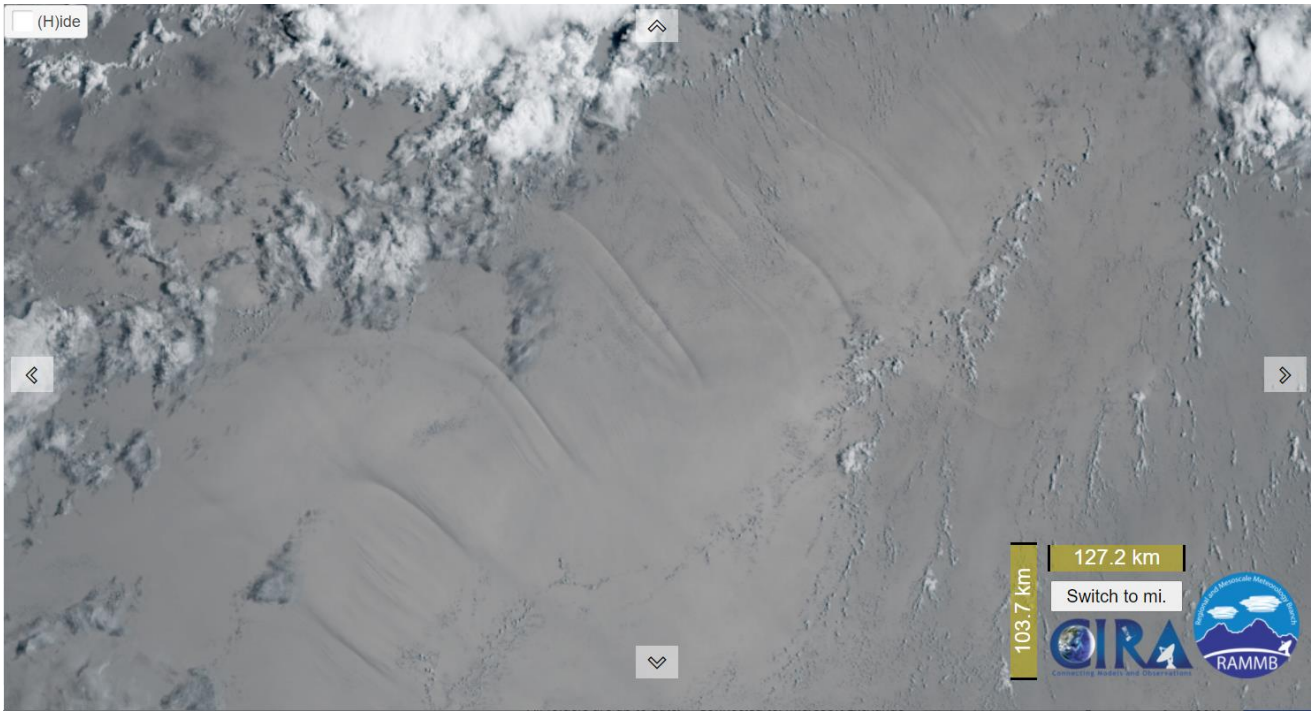

Figure 1: GeoColor image from GOES-16 ABI on 09 September 2021 at 12:00:22 UTC. Soliton waves appear as regularly spaced dark linear segments.

Awards and Recognition

Publications

Media and Outreach

Workshops, Conferences, and Meetings

Abstracts Submitted: Lewis Grasso submitted two abstracts to the International Symposium on Data Assimilation**.** One abstract focuses on simulated flights through three dimensional model domains while the second centers on using GOES-R ABI data for dust detection over the Atlantic ocean. Specifically, Abstract: On 16-17 February 2020, dust within a Saharan Air Layer (SAL) from western Africa moved over the eastern Atlantic Ocean. Satellite imagery and products from ABI on GOES-16, VIIRS on NOAA-20, and CALIOP on CALIPSO along with retrieved values of layer and total precipitable water (TPW) from MiRS and NUCAPS, respectively, were used to identify dust within the SAL over the eastern Atlantic Ocean. Use of various satellite imagery and products were also used to characterize the distribution of water vapor within the SAL. There was a distinct pattern between dust detection and dust masking and values of precipitable water. Specifically, dust was detected when values of layer TPW were approximately 14 mm; in addition, dust was masked when values of layer TPW were approximately 28 mm. In other words, water vapor masked infrared dust detection if sufficient amounts of water vapor existed in a column. Results herein provide observational support to two recent numerical studies that concluded water vapor can mask infrared detection of airborne dust. (POC: Lewis Grasso, CIRA: Lewis.Grasso@colostate.edu) Funding: GOESR

Training and Education

FDTD Satellite Applications Webinar: D. Bikos coordinated with S. Lindstrom (CIMSS) and B. Motta (NOAA/NWS/OCLO/FDTD) to deliver a Forecast Decision Training Division (FDTD) Satellite Applications webinar on 8 September 2021. The webinar was led by Dora Meredith (NWS WSO Pago Pago) and titled "Forecasting Heavy Rainfall in American Samoa with no Radar". All FDTD Satellite Applications webinars are recorded and made available for viewing at: https://rammb.cira.colostate.edu/training/visit/satellite_chat/ and also made available on the NOAA CLC. (POC: D. Bikos, CIRA, Dan.Bikos@colostate.edu) Funding: VISIT / SHyMet

Other