Weekly Report – October 13, 2023

Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

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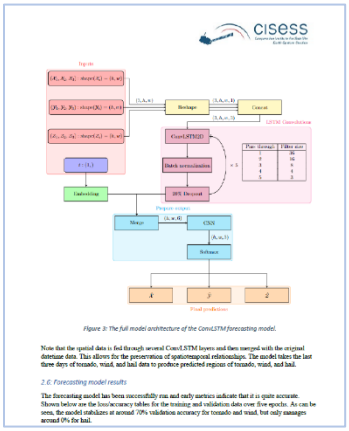
Date of Submission: 13 October 2023

HIGHLIGHTS FOR NESDIS LEADERSHIP

People

Summer Interns Report and Website Slides Now Available

The work of our 35 summer interns is on display on the CISESS website: https://cisess.umd.edu/outreach/students-page/ . It features a short summary of each project in a slideshow format at the top and has links to the slides that interns presented at the CISESS Intern Celebration at the end of August. We have also just completed a compilation of their written reports: *CISESS Summer Internship Program End-of-Summer Report 2023* (shown right), which we are distributing to our NOAA Sponsors. If you would like a copy, please contact Kate Cooney at kscooney@umd.edu. *(Kate Cooney, CISESS, kscooney@umd.edu; Funding: Task I)*



FUTURE OUTLOOK

Summary Items

Date and Name of Meeting/Event/Significant Publications ***Details Below ****

- 2023 Nov 6-10 GEO Week Ministerial Summit, Cape Town, SA, Emily Smail ***N***

Detailed Article

Newly Submitted

CISESS Scientist Emily Smail, Executive Director of GEO Blue Planet (STAR/SOCD), will be participating in the Group on Earth Observations (GEO) Week Ministerial Summit from November 6 – 10 in Cape Town, South Africa. Days 1, 2, 3 and morning of Day 4 feature presentations and panel discussions on satellite applications to agriculture, human mapping, health monitoring, biosphere information, water management, disaster warning, and climate change. The afternoon of Day 4 and Day 5 are only open to GEO Delegates and Ministers to develop a declaration on post-2025 "Earth Intelligence for All." *(Emily Smail, CISESS & STAR/SOCD, emily.smail@noaa.gov; Funding: Ocean Remote Sensing)*

TRAVEL AND MEETING REPORTS

STAR Participation in the CEOS P-VC Meeting

A Committee on Earth Observation Satellites (CEOS) Precipitation Virtual Constellation (P-VC) hybrid meeting was held on September 20th. Huan Meng attended the meeting virtually as the NOAA representative on P-VA. Besides the in-person participants from NASA, JAXA and EUMETSAT, representatives also attended the meeting virtually. The NASA Co-Chair briefed the group on the progress of the P-VC and raised several topics related to CEOS. Huan Meng provided input from NOAA's perspective during the discussion. She also contributed to the Co-Chair's report prior to the meeting and reviewed the CEOS New Space White Paper. *(Huan Meng, CISESS & SMCD, huan.meng@noaa.gov; Funding: PDRA)*
This item was submitted in the SMCD Weekly Report.

TRAINING AND EDUCATION

TOWR-S Seminar on STAR Snowfall Rate Products

Huan Meng gave an invited Total Operational Weather Readiness – Satellites (TOWR-S) seminar on September 28. The TOWR-S seminars are sponsored by the NWS Office of Observations, the GOES-R Program and the JPSS Program. They aim to promote the applications of satellite products in NWS operations. The seminar focused on the STAR snowfall rate products and provided an updated presentation compared to one given about three years ago. Meng highlighted the progress made in recent years in both satellite-based and merged radar-satellite snowfall rate products. This seminar served as preparation for the upcoming TOWR-S RPM release (v24), which will include the configuration files for the STAR snowfall rate products. This release will enable all NWS Weather Forecast Offices to access these products for their operations. NASA Short-term Research and Transition Center (SpoRT) will provide the product data in near real-time. *(Huan Meng, CISESS & SMCD, huan.meng@noaa.gov; Funding: PDRA)*
This item was submitted in the SMCD Weekly Report.

PUBLICATIONS

Evaluation of the NOAA Global Daily VIIRS Surface Albedo

Citation: **Peng, Jingjing; Peng Yu,** Yunyue Yu, **Aolin Jia, Dongdong Wang, Heshun Wang**, and **Zhihao Wang**, 2023: An evaluation of the NOAA global daily gap-filled VIIRS surface albedo, *Remote Sens. Environ.*, **298**, 113822, https://doi.org/10.1016/j.rse.2023.113822.

Summary: This article is about the development and validation of the new albedo product from the Visible Infrared Imaging Radiometer Suite (VIIRS) on NOAA-20 by a group that included several CISESS scientists. This product is gridded and fills in any gaps in the record using the nearest neighbor strategy and forward mapping method. Validation against S-NPP VIIRS and MODIS showed good agreement. An example of the NOAA-20 global gridded albedo product is shown in the figure below, graphing the albedo and its quality variables. In this case, albedo has complete coverage, except for northern Greenland, which has no solar radiation during the polar night. The albedo map shows continuous albedo distribution over all-sky conditions. The median value within the highest-quality group is used as the final value because it is less affected by outliers and skewed data than the mean value**.**

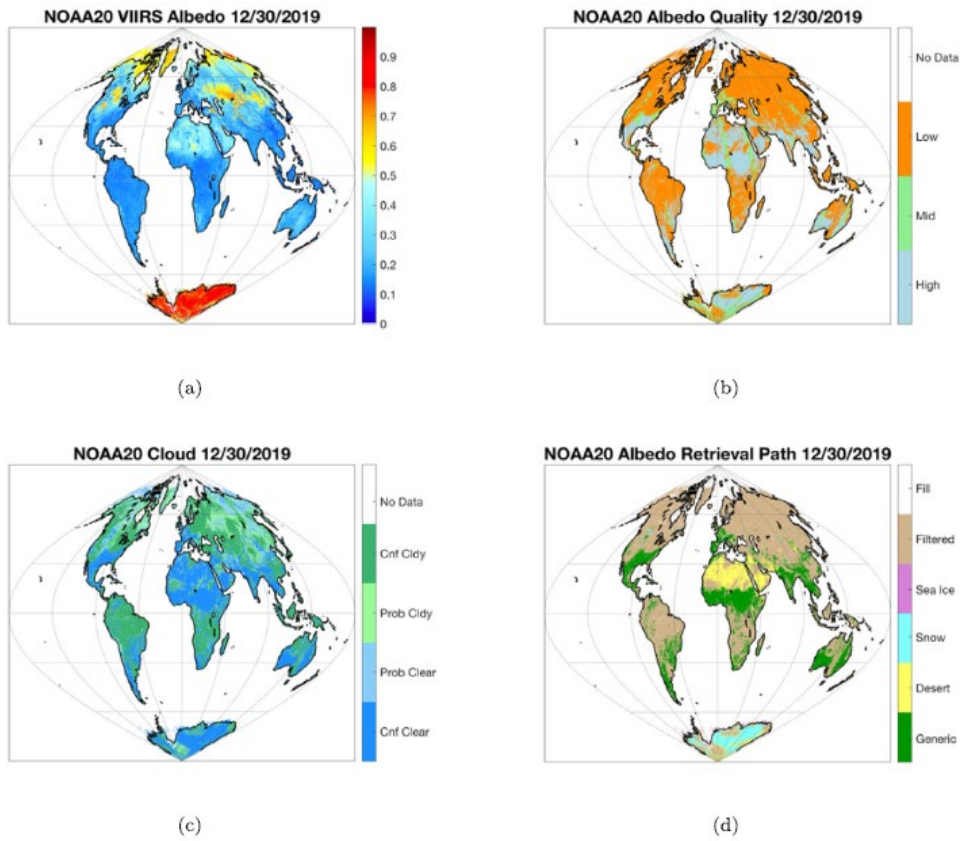


***Figure**: Daily composite of NOAA-20 VIIRS surface albedo acquired 30 December 2019. Datasets: NOAA-20 daily gridded global albedo (a), overall quality (b), cloud mask flag (c), and retrieval path flag (d). (Jingjing Peng, CISESS, jingjing.peng@noaa.gov, Funding: JSTAR & GOES-R AWG)*