Weekly Report

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

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Publications

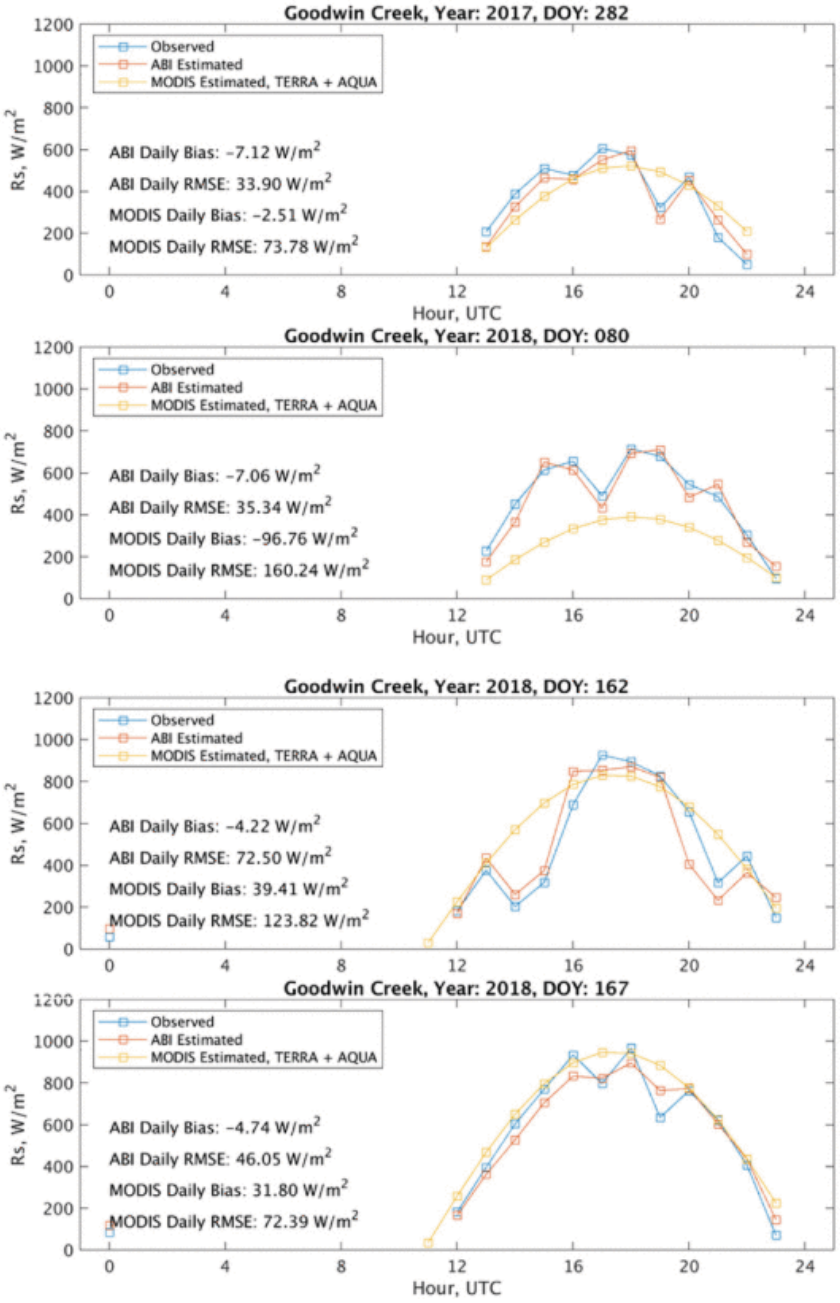
Four Satellite Articles on CISESS Tasks: The latest issue of *IEEE Transactions on Geoscience and Remote Sensing* has articles on four differnent CISESS Tasks:

- **Wang, Wenhui**; Changyong Cao, Slawomir Blonski, Yalong Gu, **Bin Zhang** and **Sirish Uprety**, 2022: An improved method for VIIRS radiance limit verification and saturation rollover flagging. *IEEE Trans. Geosci. Remote Sens.*, **60**, 1-11, Art no. 5403011, https://dx.doi.org/10.1109/TGRS.2021.3097896. CISESS Scientist Wenhui Wang leads a task on the JPSS Visible/Infrared Imager Radiometer Suite (VIIRS) calibration and validation of the Day-Night Band (DNB), reflective solar band (RSB) and thermal emissive band (TEB). In this artice, she describes an improved radiance limit verification and saturation rollover flagging method for pixel-level errors in Sensor Data Records.

- Vahedizade, Sajad; Ardeshir Ebtehaj, **Yalei You**, Sarah E. Ringerud and F. Joseph Turk, 2022: Passive Microwave Signatures and Retrieval of High-Latitude Snowfall Over Open Oceans and Sea Ice: Insights From Coincidences of GPM and CloudSat Satellites. *IEEE Trans. Geosci. Remote Sens.*, **60**, 1-13, Art no. 4300913, https://dx.doi.org/10.1109/TGRS.2021.3071709. CISESS Scientist Yalei You leads a task on developing and assessing the NOAA Alaska Regional Snowfall Rate Product. His new article introduces a new snowfall retrieval algorithm over open ocean (sea ice) with a true positive rate of 92% (85%) and a RSME of 0.24 (0.15) mmh^{-1}.

- Tremblay, Denis A.; Favio Iturbide-Sanchez, Yong Chen, Lori Borg, Joe Predina, Xin Jin, David C. Tobin, **Larrabee Strow**, Daniel L. Mooney, Dave Johnson, Lawrence Suwinski, and Henry E. Revercomb, 2022: Radiometric noise assessment of the Cross-Track Infrared Sounder on the NOAA-20 satellite. *IEEE Trans. Geosci. Remote Sens.*, **60**, 1-15, Art no. 5506615, https://doi.org/10.1109/TGRS.2021.3083137. CISESS Consortium Scientist Larabee Strow (UMBC) leads a task on calibration and validation of JPSS the Cross-Track Infrared Sounder CrIS Cal/Val) and the NOAA Unique Combined Atmospheric Processing System (NUCAPS). His new article is on two new methods to estimate the CrIS noise equivalent radiance differential.

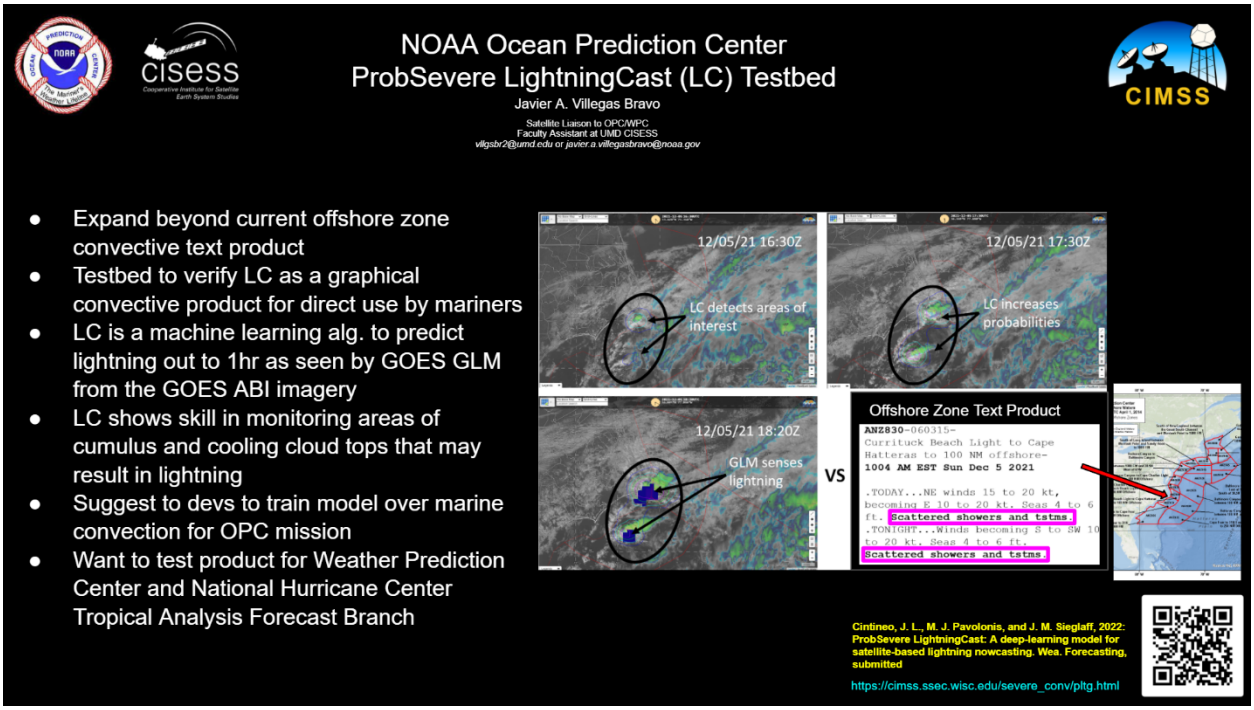
- CISESS Scientist Dongdong Wang (UMD GEOG) leads a task on the S-NPP and JPSS land surface albedo algorithm. His team's new article is on Surface incident shortwave radiation (ISR), an important component of the surface radiation budget. The team refined the optimization method developed for polar-orbiting satellite data and applied it to estimate ISR from the new generation geostationary Himawari Advanced Himawari Imager (AHI) and GOES-R Advanced Baseline Imager (ABI). Their study also demonstrated that AHI and ABI observations have realized much better estimations for hourly and diurnal ISR than previous polar-orbiting satellite data because of their higher frequency of sampling on the atmospheric conditions (see the figures below).



Zhang , Yi; Shunlin Liang, Tao He, **Dongdong Wang**, Yunyue Yu, and Han Ma, 2022: Estimation of land surface incident shortwave radiation from geostationary Advanced Himawari Imager and Advanced Baseline Imager observations using an optimization method. *IEEE Trans. Geosci. Remote Sens.*, **60**, 1-11, Art no. 5600611, https://doi.org/10.1109/TGRS.2020.3038829.

Workshops, Conferences, and Meetings

ProbSevere LightningCast Product Testbed at OPC: CISESS Scientist Javier Villegas Bravo, the GOES-R Satellite Liaison to the National Weather Service (NWS), conducted a testbed at the Ocean Prediction center to evaluate the ProbSevere LightningCast (LC) product. The goal is to expand OPC's 6hr offshore convective text product to a graphical product with full CONUS/PACUS coverage and 5 min resolution. The product was developed at CIMSS by John Cintineo, Michael Pavolonis and Justin Sieglaff. The talk was presented at the TOWR-S Satellite Book Club series and the recording can be viewed here: SBC Session 85 - ProbSevere LightningCast Testbed at the Ocean Prediction Center – YouTube: https://www.youtube.com/watch?v=tL3XdeQKsQA&authuser=0 . Below is a summary slide and the product can be viewed here: https://cimss.ssec.wisc.edu/severe_conv/pltg.html .



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