

Weekly Report – June 10, 2022
Satellite Climate Studies Branch (SCSB)/CISESS
NOAA/NESDIS/STAR
Acting Branch Chief: John Knaff

Submitted by: John Knaff
Email: John.Knaff@noaa.gov
Phone: 970-491-8881

Date of Submission: 10 June 2022

TRAVEL AND MEETING REPORTS

Significantly Higher Level of Contemporary Global Fire Emissions: CISESS scientists Joanne Hall and Louis Giglio (UMD Geography Department), who are working on the development of a next-generation science-quality geostationary satellite active fire product, co-authored a talk at the European Geosciences Union (EGU) General Assembly that took place on May 23-27 in Vienna, Austria and online. Their presentation provided evidence of significantly higher global fire emissions than previous inventories, as a result of recent advances in scientific understanding of burned area, fuel consumption, and emission factors. Increases in the availability of high-resolution burned area datasets from Sentinel and Landsat allow for more effective estimation of fire scars associated with small and discontinuous fires in many biomes. By combining these regional-scale datasets with burned area and active fire observations from the Moderate Resolution Imaging Spectroradiometer (MODIS), they estimate that global burned area exceeded 700 Mha per year during 2001-2020. The impact of contemporary wildfires may have been underestimated in past work.



Randerson, James; Yang Chen, Li Xu, **Joanne Hall**, **Louis Giglio**, Dave van Wees, Sander Veraverbeke, Guido van der Werf, Douglas Morton, Elizabeth Wiggins, Niels Andela, and Stijn Hantson, 2022: Evidence for a stronger global impact of fire on atmospheric composition, *EGU General Assembly 2022*, Vienna, Austria, 23–27 May 2022, EGU22-12015, <https://doi.org/10.5194/egusphere-egu22-12015>.

(Louis Giglio, lgiglio@umd.edu; Joanne Hall, jhall1@umd.edu; NOAA Roses)

Lightning as an Indicator of Climate: CISESS scientist Daile Zhang attended and presented at the National Climate Assessment (NCA) “Lightning as an Indicator of Climate” Annual Science Meeting that was held on June 6-7 at the UMD Department of Atmospheric and Oceanic Science (AOSC) Atlantic Building. The meeting is an annual working group get-together for people from NASA, University of Arizona, City College of New York, University of Alabama in



U.S. Global Change Research Program

National Climate Assessment

Huntsville, and University of Maryland on various lightning tasks/projects, including lightning climatology, lightning NOx observations, dry lightning, wildfires, and this year’s NASA Marshall Space Flight Center CubeSpark project. The talk, co-authored by Ken Cummins (University of Arizona), Tim Lang (NASA), and Dennis Buechler (NASA), included an inter-comparison of the Geostationary Lightning Mapper (GLM), International Space Station-Lightning Imaging Sensor (ISS-LIS), and Tropical Rainfall Measuring Mission-Lightning Imaging Sensor (TRMM-LIS). Dr. Zhang presented the work on the satellite lightning observations, funded by NOAA ROSES, and the Raspberry Pi observations, funded by a CISESS Seed Grant.

Inter-comparison of GLM, ISS-LIS, and TRMM-LIS

2022 NCA Meeting

Daile Zhang, Ken Cummins, Tim Lang, and Dennis Buechler



(Daile Zhang, dlzhang@umd.edu, GOES-R AWG, GOES-R PGRR, NOAA-NASA ROSES)