

Increased African fire carbon emissions inferred from TROPOMI carbon monoxide retrievals

Brendan

Byrne

Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States

Junjie Liu, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States

Jeongmin Yun, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States

Sourish Basu, NASA Goddard Space Flight Center, Global Modeling and Assimilation Office, Greenbelt, MD, USA

Chris O'Dell, Colorado State University

Kathryn McKain, NOAA Global Monitoring Laboratory, Boulder, CO

Poster

Fires across Africa account for the vast majority of global burned area, and account for roughly half of global fire carbon emissions. Still, total fire carbon emissions over Africa are uncertain, with refined burned area mapping driving up emission estimates. Here, we employ a top-down approach to quantify fire emissions based on satellite retrievals of carbon monoxide observed by the TROPospheric Monitoring Instrument (TROPOMI) instrument. Top-down annual African fire carbon emissions are found to be roughly doubled from the prior estimates (GFED4.1s, QFED, finn), consistent with upward revision resulting from better burned area mapping. This presentation will discuss the regional and temporal patterns of top-down fire emissions, uncertainties in top-down approach, and the implications for the African carbon budget.

Meeting homepage

[IWGGMS-20 Workshop](#)

[Download to PDF](#)