

DR. GREGORY J. FROST**RESEARCH CHEMIST**

Chemical Sciences Division (CSD), Earth System Research Laboratory (ESRL), National Oceanic & Atmospheric Administration (NOAA), Boulder, Colorado, USA. email: Gregor_j.frost@noaa.gov

Summary of Professional Achievements

Dr. Gregory Frost uses observations and models to understand the impacts of atmospheric emissions and chemistry on air quality, weather, and climate change. He is the Atmospheric Composition and Chemistry Liaison for NOAA's Office of Oceanic and Atmospheric Research. Dr. Frost co-chairs the Global Emissions Initiative (GEIA) and is a member of the scientific steering committee of the International Global Atmospheric Chemistry (IGAC) project. He has served on teams leading the NOAA/NASA Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ) study, the Commitment Emissions Data System (CEDS), and NASA's Geostationary Coastal and Air Pollution Events (GEO-CAPE) effort. He was an Associate Editor for the *Journal of Geophysical Research – Atmospheres* from 2007 to 2019.

Education

Doctor of Philosophy, Physical Chemistry, University of Colorado, Boulder, CO, 1995

Bachelor of Science, Chemistry, University of California, Berkeley, CA, 1989

Professional Employment History

2014 – Present, Research Chemist, NOAA ESRL CSD

1997 – 2014, Research Scientist, University of Colorado, CIRES; Affiliate Scientist, NOAA ESRL CSD

1995 – 1997, NRC Postdoctoral Associate, NOAA Aeronomics Laboratory

1989 – 1995, Graduate Research Assistant, University of Colorado

Selected Publications (*93 peer-reviewed articles, 10 first-authored, H-index = 40*)

Das, M., [], [G. Frost](#), et al. **2019**: Reflecting on progress since the 2005 NARSTO emissions inventory report. *J. Air Waste Manage. Assoc.*, 69, 9, 1023-1048, doi: 10.1080/10962247.2019.1629363.

Gorchoy-Negron, A., [], [G. J. Frost](#), et al. **2018**. A Spatially Resolved Field-Based Inventory of Oil and Natural Gas Emissions. *Environ. Sci. & Technology*, 52, 17, 10175–10185, doi:10.1021/acs.est.8b02245.

McDonald, B.C., [], [G. J. Frost](#), et al. **2018**. Modeling Ozone in the Eastern U.S. Using a Field-Based Mobile Source Emissions Inventory. *Environ. Sci. & Technology*, 52, 13, 7360-7370, doi:10.1021/acs.est.8b0077.

McDonald, B.C., [], [G. J. Frost](#), et al. **2018**. Volatile Chemical Products Emerging as Largest Petrochemical Source of Urban Organic Emissions. *Science*, 359, 760–764, doi:10.1126/science.aag0524.

Kim, S.-W., [], [G. J. Frost](#), et al., **2016**: Modeling the diel cycle of NO and CO emissions and their impacts on O₃ in the Los Angeles-South Coast Air Basin during the CalNex 2010 field campaign. *J. Geophys. Res. Atmos.*, 121, 1340–1360, doi: 10.1002/2015JD024292.

Ahmado, R., [], [G. J. Frost](#), et al., **2015**: Understanding high intertime ozone pollution events in an oil and natural gas producing region of the eastern US, *Atmos. Chem. Phys.*, 15, 411-429, doi:10.5194/acp-15-411-2015.

Peterson, G., [], [G. J. Frost](#), et al., **2014**: A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin. *J. Geophys. Res. Atmos.*, 119, 6836-6852, doi:10.1002/2013JD021272.

[Frost, G. J.](#), et al., **2013**: New Directions: GEIA's 2020 vision for better air emissions information, *Atmos. Environ.*, doi:10.1016/j.atmosenv.2013.08.063.

Karion, A., [], [G. Frost](#), et al., **2013**: Methane emissions estimate from airborne measurements over a eastern United States natural gas field. *Geophys. Res. Lett.*, 40, 4393-4397, doi:10.1002/grl.50811.

Kim, S.-W., [], [G. J. Frost](#), et al., **2009**: NO₂ columns in the eastern U.S. observed from space and simulated by a regional chemistry model and their implications for NO emissions. *J. Geophys. Res.*, 114, D11301, doi: 10.1029/2008JD011343.

Kim, S.-W., [], [G. J. Frost](#), et al., **2006**: Satellite-observed US power plant NO emission reductions and their impact on air quality. *Geophys. Res. Lett.*, 33, L22812, doi:10.1029/2006GL027749.

[Frost, G. J.](#), et al., **2006**: Effects of changing power plant NO emissions on ozone in the eastern United States: Proof-of-concept. *J. Geophys. Res.*, 111, D12306, doi:10.1029/2005JD006354.

Grell, G. A., [], [G. Frost](#), et al., **2005**: Fully coupled online chemistry within the WRF model. *Atmos. Environ.*, 39, 6957-6975.