Opportunity Title: Measuring Emissions of Urban Greenhouse Gases and Pollutants Using Mountaintop Remote Sensing Spectroscopy
Opportunity Reference Code: 0208-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0208-NPP-NOV23-JPL-EarthSci

Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description The Los Angeles basin is a very large source of the important greenhouse gases CO_2, CH_4 and N_2O, and pollutants such as CO and aerosols. Recent legislation in California, such as the Global Warming Solutions Act (AB32), has mandated progressive reductions in statewide greenhouse gas emissions. Verifying the effectiveness of greenhouse gas controls requires frequent, high-precision measurements over a large area combined within a modeling framework to account for the efffects of atmospheric transport and to convert measured atmospheric abundances into emission rates.

To address this requirement, we have developed an innovative mountaintop observatory, California Laboratory for Atmospheric Remote Sensing (CLARS), that uses high-resolution infrared spectrometers to survey the spatial and temporal distributions of greenhouse gases and pollutants in Los Angeles. In continuous operation since 2011, CLARS is a unique facility that has resulted in numberous publications on greenhouse gases, pollutants, aerosol physics and remote sensing technology.

We seek motivated applicants with backgrounds in fields such as atmospheric modeling, remote sensing, geographical information systems, spectroscopy and instrumentation.

References

He, L. et al.,; Atmospheric methane emissions correlate with natural gas consumption from residential and commercial sectors in Los Angeles; *Geophys. Res. Lett.;* **2019**, http://dx.doi.org/10.1029/2019GL083400

Zeng, Z.-C. et al., Investigating wavelength-dependent aerosol optical properties using water vapor slant column retrievals from CLARS over the Los Angeles basin, *Atmos. Chem. Phys.*; **2017**, *17*, 2495-2508. http://dx.doi.org/ 10.5194/acp-17-2495-2017

Wong, K. W. et al., Mapping CH_4:CO_2 ratios in Los Angeles, with simulated satellite remote sensing from Mount Wilson, California, *Atmos. Chem. Phys.*, 2015, 15, 241-252, http://doi.org/10.5194/acp-15-241-2015

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Earth Science

Advisors:
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818-354-2625

Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: https://www.nasa.gov/oiir/export-control.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Eligibility Requirements

- **Degree:** Doctoral Degree.