



Satellite Data for Air Quality Environmental Justice and Equity Applications

August 23, 30, & September 06, 2023

13:30-15:30 EDT (UTC-4)

In this training, the NASA Applied Remote Sensing Training (ARSET) program in collaboration with the Health and Air Quality Science Team (HAQAST) Tiger Team on Satellite Data for Environmental Justice, will demonstrate how remotely-sensed environmental indicators, specifically for air pollution, can be paired with demographic data to understand disproportionate exposures among minoritized and marginalized population subgroups.

This training will consist of three two-hour sessions and be held online. The first session will provide an introduction to how satellite data have been used in environmental justice (EJ) applications. The second session will focus on satellite remote sensing of air quality, emphasizing aspects of environmental justice related to air pollution exposure. Finally, the third session will have interactive exercises combining satellite and demographic data with EJSCREEN and Python.

The primary focus of this training is on environmental justice issues in the United States, with some additional examples from around the world.

Part 1: Use of Satellite Data in Environmental Justice Applications

Trainers: HAQAST Team

- Opening remarks, introduction to ARSET & overview of this training
- Introduction to Satellite Data for Environmental Justice (SD4EJ) objectives and basic concepts
- Strengths (and weaknesses) of satellite data for EJ
- History of satellite data and EJ
- Vignettes from different EJ researchers
- A deeper dive case study on air pollution EJ applications of satellite data
- Demonstration of EJ toolkits and maps.
- Q&A

Part 2: Satellite Remote Sensing of Air Quality for Environmental Justice Applications

Trainers: ARSET Team

- Opening remarks, introduction and recap of the last session
- Basics of air quality and its health impacts
- Basics of remote sensing for air quality
- Satellite data products and tools relevant for air quality EJ applications
- Demonstration of satellite data visualization tools
- Q&A



ARSET empowers the global community through remote sensing training.



Part 3: Interactive Exercises for using Satellite and Demographic Data

Trainers: HAQAST Team

- Introduction to EJSCREEN
- Walkthrough of NO₂ and demographics in Baltimore using EJSCREEN
- Hands-on activity with EJSCREEN
- Introduction to Python-based analysis
- Demonstration of statistical calculations and mapping in Python
- Q&A



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