Using Google Earth Engine for Land Monitoring Applications

June 16, 23, & 30, 2021

12:00-14:00 EDT (UTC-4)

Google Earth Engine (GEE) for remote sensing applications is quickly becoming one of the most utilized tools in the scientific and decision-making community. GEE provides unparalleled access to large-scale data analysis through cloud computing technology. The online interface allows users to access and analyze stores of NASA Earth data without the need for any locally stored data or software. This training will cover the GEE Code Editor, hands-on exercises on change detection, time series analysis, land cover classification, and accuracy assessment of optical imagery. These processes are an integral part of optical imagery analysis for many applications, including monitoring forest disturbance, wildfire mapping, identifying land cover degradation, mapping ecosystem connectivity, and identification of land surface changes due to urban growth. Attendees will be provided scripts for conducting these analyses in GEE and instructed on how to execute these scripts to produce maps and visualizations of environmental data.

Part 1: Google Earth Engine Basics and General Applications

- Introduction to Google Earth Engine Functionalities and Available Data Types
- Basics Functions in GEE JavaScript API Activity
- Python API Demonstration
- Q&A

Part 2: Land Cover Classification and Accuracy Assessment in Google Earth Engine

- Land Cover Classification and Accuracy Assessment Overview
- Landsat Data Retrieval and Imagery Preparation
- Supervised Land Cover Classification
- Accuracy Assessment of Land Classifications
- Q&A

Part 3: Time Series Analysis and Change Detection in Google Earth Engine

- Overview of Time Series and Change Detection
- Environmental Parameter Calculations
- Time Series Display of Environmental Data
- Change Detection Calculation and Mapping
- Q&A

ARSET empowers the global community through remote sensing training.

appliedsciences.nasa.gov/arset