



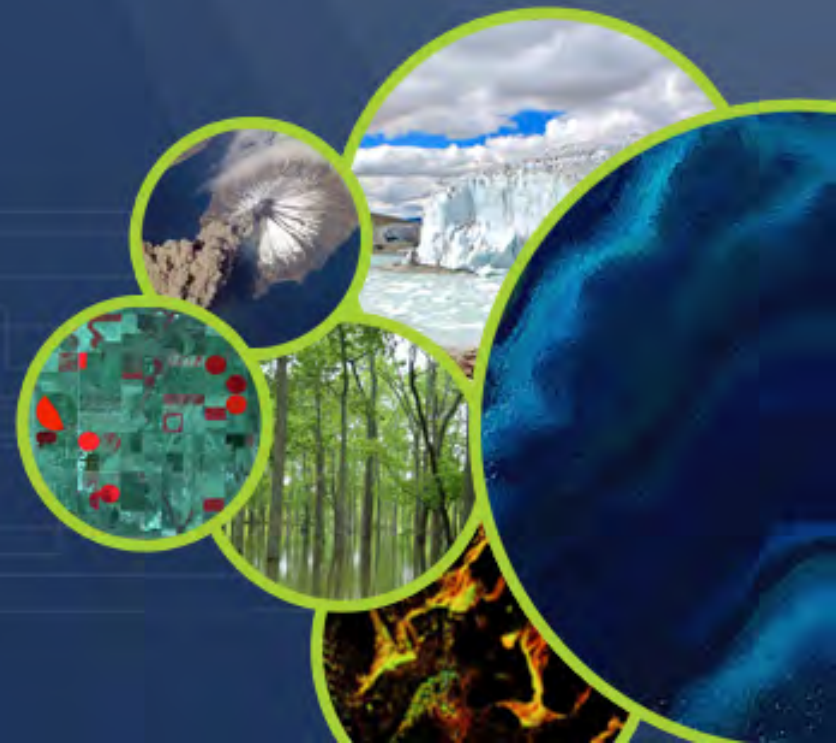
Open Data Cube

Online User Interface Demonstration

Africa Regional Data Cube
Training Workshop
May 10, 2018 (Day #2)

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Online User Interface (UI)



Welcome to the Open Data Cube

CEOS is using the power of the Open Data Cube to help address the needs of satellite data users, giving them a better picture of their land resources and land change.

- Ease of use and access to satellite-based data
- Multiple dataset interoperability and spatial consistency
- Use of "Analysis Ready" Data Products
- A Shift in Paradigm from Scenes to Pixels

<http://tinyurl.com/datacubeui>
Free and Open!

20 sample data cubes
10 common applications

Key Features of the UI



- An “easy to use” GIS tool for “high level” analyses and case studies
- No need to understand Python code, as everything is menu driven and the algorithms are “built in”
- Open Source modular software design that allows users to modify the interface and add algorithms
- Currently only performs analyses on Landsat-7 and Landsat-8 datasets but there are plans to add features for Sentinel-1
- Data Cube viewing ... location, space and time extents
- Subsetting for Data Cube download and offline use
- Outputs in PNG (images), GeoTIFF or netCDF, and GIF animations
- Single pixel analyses or “pixel drill”
- Each country will have their own UI with a view of their data cube.

Details Pane

Main Menu Bar

GIS Viewport

Open Data Cube Home Data Cube Manager Tools Task Manager Submit Feedback Logged in as: temp Logout

Filters History Results

Output

Satellite
Landsat 7

Data Selection:

Image Background Color:
Black

Generate Time Series Animation
None

Geospatial Bounds:

Min Latitude	Max Latitude
Min Longitude	Max Longitude
Start Date	End Date

04/15/1999 12/25/2016

Additional Options Submit

Running tasks

Lat: 17.7226, Lon: 11.8116

Status Pane

Data Cube Manager

- **Data Cube Visualization** ... Where are the cubes?
- **Dataset Types** ... Sortable list of cubes
- **Dataset Viewer** ... Spatial and time extents of cubes
- **Ingestion Configuration Builder** ... A method to add new datasets and create cubes
- **Ingestion on Demand** ... Subsetting a sample cube for download and offline analyses

Where are the Data Cubes?



Kenya, Cameroon (Lake Chad), Togo (coastal Africa), Ghana, Colombia, Samoa and Tonga (Pacific Islands), Vietnam, Uruguay, Australia (Menindee Lakes), Bangladesh, South Africa, Switzerland, Honduras

Tools (Algorithms)

1. Water-based Algorithms:

- a. Water Detection – Water Observations Form Space (WOFS)
- b. Water Quality – Total Suspended Matter (TSM)
- c. Coastal Change – Change in coastal region

2. Land-based Algorithms:

- a. Urbanization – Normalized Difference Built-up Index (NDBI)
- b. Spectral Indices – Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI), Normalized Difference Built Index (NDBI), Enhanced Vegetation Index (EVI), Soil Adjusted Vegetation Index (SAVI), Normalized Burn Ratio (NBR), Normalized Burn Ratio 2 (NBR 2)
- c. Landslides – Sudden Landslide Identification Product (SLIP)
- d. NDVI Anomaly – Deviation in NDVI index from a specific baseline period
- e. Fractional Coverage – Vegetational fractional cover

3. General Algorithms

- a. Custom Mosaic – Creation of cloud-free composites
- b. Cloud Coverage – Mosaic displaying cloud coverage

