



National Aeronautics and
Space Administration



ARSET

Applied Remote Sensing Training

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 @NASAARSET

Satellite Data Level & Format

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Satellite Remote Sensing of Air Quality: Data, Tools, and Applications

Tuesday, May 23, 2017 – Friday, May 26, 2017

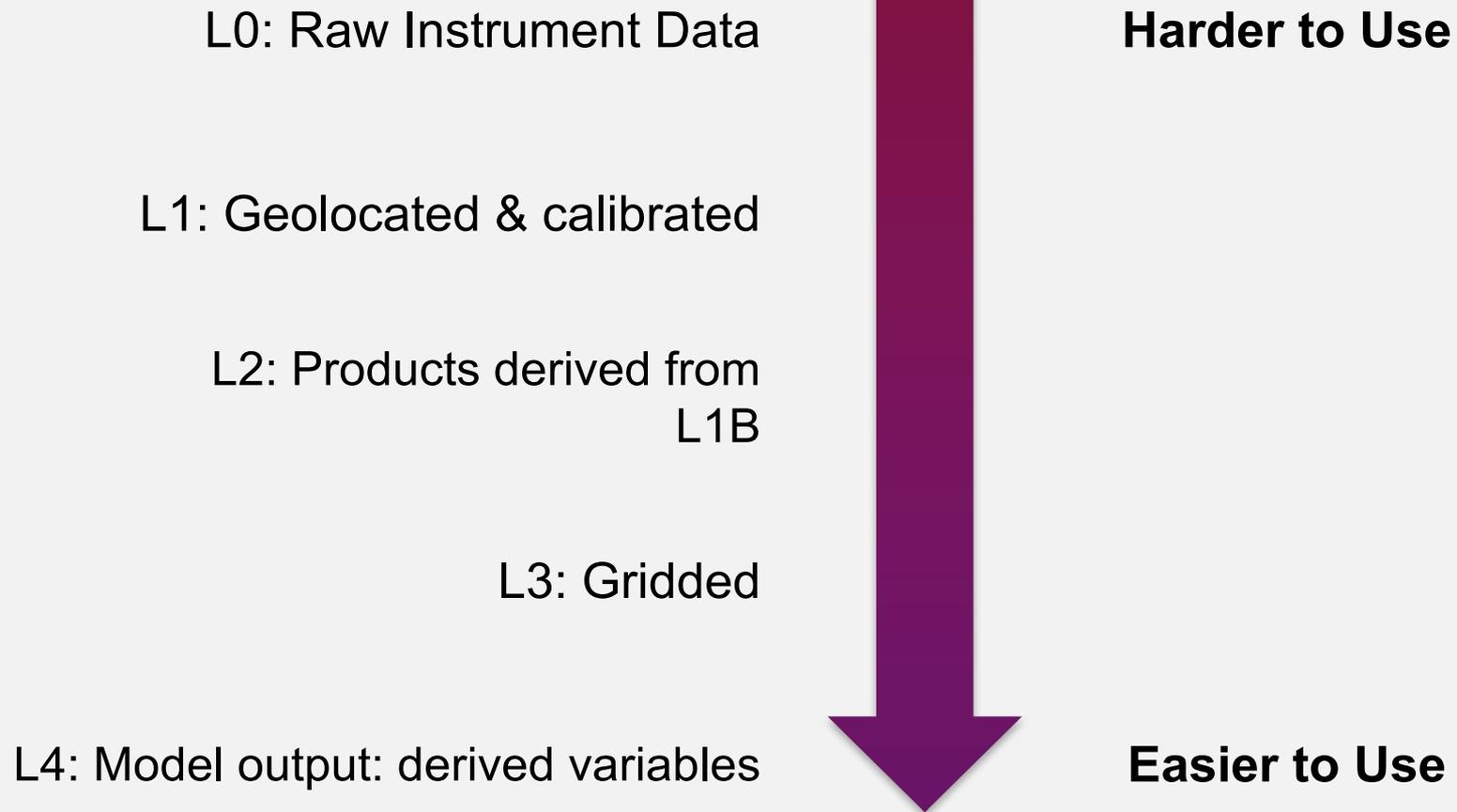
Indian Institute of Tropical Meteorology, Pune, India

Objectives

By the end of this presentation, you will be able to:

- list the different satellite data formats and levels

Data Processing Levels



Data Levels

Orbital Data (Levels 0, 1, 2)

- More user control
- Highest spatial/temporal resolution
- Harder to use

Gridded Data Products (Levels 3, 4)

- Less user control
- Lower spatial/temporal resolution, but gridded
- May be available at multiple spatial/temporal resolutions
- More web tools available for analysis and access
- Easier to use

Aerosol Data Product Hierarchy

Level 1 Products

- Raw data with and without applied calibration
- **No aerosol data**

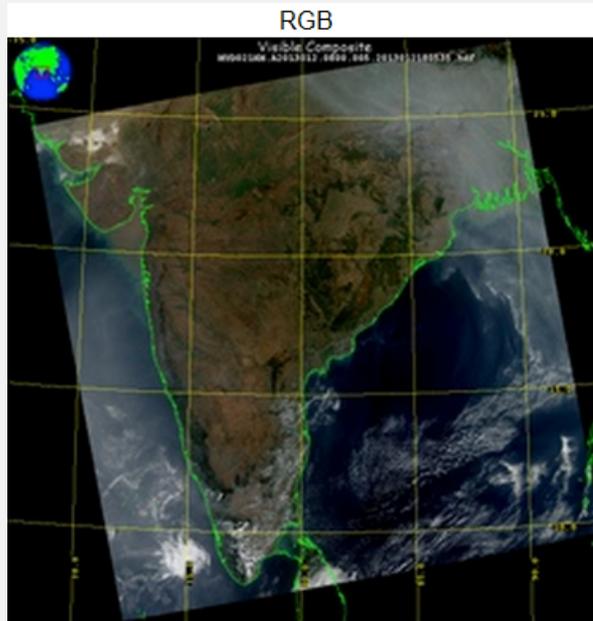
Level 2 Products

- Geophysical products
- **Aerosol data**

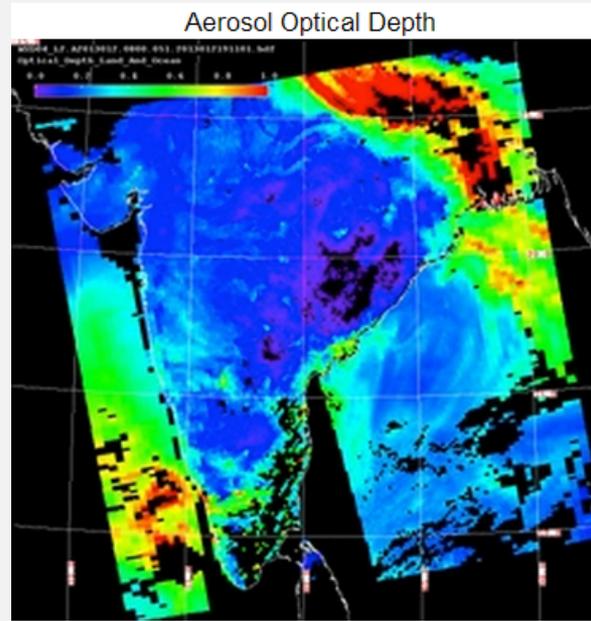
Level 3 Products

- Globally gridded geophysical products
- **Aerosol data**

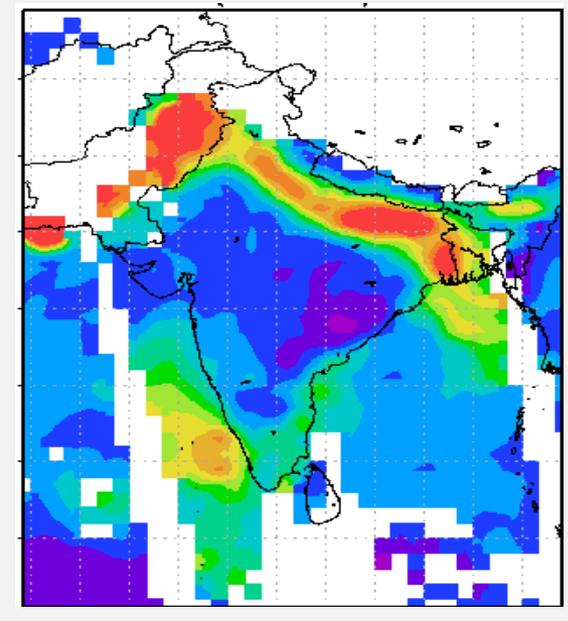
Levels of Data



Level 1B
Calibration to
Radiance



Level 2
Aerosol Retrieval
Algorithm



Level 3
Spatial and
Temporal
Averaging

Data Formats

Text/ASCII

- Pros: easy to read and examine right away
- Cons: large data files, not always available

Binary: HDF, NetCDF, OpenDAP

- Pros: less space, more information (metadata, SDS)
- Cons: Needs specific tools or code to read the data

KML or KMZ (zipped KML)

- Pros: easy 2D & 3D visualization of data through free tools; data files are similar in size and easier to download

Shapefile/GeoTIFF

- GIS applications
- May or may not work with open source

A satellite-style map of the Pacific Northwest region of North America, showing the coastline, mountains, and forests. A large, semi-transparent gray rectangular box is overlaid on the map, covering most of the central and eastern parts of the region. The word "Questions" is written in a bold, black, sans-serif font in the lower-left corner of this box. A horizontal black line is positioned directly below the text.

Questions
