SeaDAS: NASA Software for the Analysis of Earth-Viewing Satellite Data

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SeaDAS is visualization, processing, and analysis software for use with Earth-viewing satellite data. This open-source NASA software, (current version 7.4), enables users to work with all levels of OB.DAAC (Ocean Biology Distributed Active Archive Center) data. This is the official distribution source of the NASA OCSSW (Ocean Color Science Software) processors (such as l2gen, l2bin, l3mapgen, etc.). These processors use the latest accepted NASA OBPG (Ocean Biology Processing Group) algorithms, which includes atmospheric correction. SeaDAS provides tools to retrieve and use the same coincident ancillary measurements used in NASA’s official data processing stream. SeaDAS processing provides a standardized data format across a multitude of satellites, currently fully supporting over 16 missions. The visualization and analysis tools can be used on many other missions. SeaDAS allows for integration of field measurement data for comparison with satellite data. NASA provides strong user support for SeaDAS. Scientific data products can be exported from SeaDAS in formatted files readily readable by many third party GIS analysis packages.

- **Color Palette Scaling**
  - Standard Range
  - Low Range
  - High Range

- **Data Comparison**
  - Nighttime Scene
    - Level-2 SST
  - Daytime Scene
    - Level-2 SST
    - (11 hours later)

- **Standard Products**
  - Ocean Color (OC) Product Suite
    - aot: Aerosol Optical Thickness
    - angstrom: Aerosol Angstrom Exponent
    - Rrs: Remote Sensing Reflectance
    - chlor_a: Chlorophyll Concentration
    - Kd_490: Diffuse Attenuation Coefficient
    - pic: Particulate Inorganic Carbon
    - poc: Particulate Organic Carbon
    - ipar: Instantaneous Photosynthetically Available Radiation
    - nh: Normalized Fluorescence Line Height
    - par: Photosynthetically Available Radiation
  - Sea Surface Temperature (SST) Product Suite
    - sst: Sea Surface Temperature
  - Inherent Optical Properties (IOP) Product Suite
    - a: Total Absorption
    - b: Total Backscattering
    - aph: Absorption due to Phytoplankton
    - adj: Absorption due to yellow substance and detrital matter
    - bbp: Particulate Backscattering

- **Atmospheric Correction**
  - No Atmospheric Correction
    - Reflectance at top of atmosphere (rhor_555)
  - Atmospheric Correction Applied
    - Reflectance at the planet surface (rhot_555)

- **Masking [Vector]**
  - Vector Shape Mask
    - Region of Interest (ROI)
    - Exclusion Masked

- **Masking [Raster]**
  - MODIS Aqua Image of Lisbon Jan 17, 2017
    - Red=rhos_645 (resolution=250m)
    - Green=rhos_555 (resolution=500m)
    - Blue=rhos_469 (resolution=500m)

- **Pixel Extraction**

- **True Color**
  - -9.5 to -9.0
  - -9.5 to -9.0

http://seadas.gsfc.nasa.gov

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BEAM Developers: Brockmann Consult (ESA)