SeaDAS: NASA Software for the Analysis of Earth-Viewing Satellite Data
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SeaDAS is a comprehensive software package developed by NASA OBPG (Ocean Biology Processing Group) for the processing, display, analysis, and quality control of remote-sensing Earth data. SeaDAS is open-source and serves as the official distribution point of the NASA OBPG Science Software. This science processing component of SeaDAS applies the OBPG algorithms to satellite data in order to characterize and calibrate the data and generate science quality OBPG products. Additional coinciding ancillary data are retrieved and used to correct for and calibrate out the atmospheric components of the signal in order to determine an Earth/ocean surface component of the signal and consequently to generate higher order products in the optical path such as Chlorophyll, SST, KD, 490, etc. SeaDAS processing provides a standardized data format across a multitude of satellites, currently supporting over 15 US and international satellite missions. The visualization and analysis tools can also be used on many other unsupported satellite missions. Customization is done to develop and apply within SeaDAS to evaluate ocean, land and atmospheric data, as well as to produce true color imagery. SeaDAS can also integrate SeaBASS format field measurement (in situ) data for comparative analysis with relevant satellite data. Scientific data products can be exported from SeaDAS in file formats readily readable by many third party GIS analysis packages.

**True Color**
Korea Strait: Busan, South Korea & Tushima Island, Japan
Pseudo true color (Hsv, Eos, no5, no6, no7, no8) (left)
Chlorophyll overlay (center and right) with additional smoothing filter (1x1) applied (right)
LandSat 8 (OLI) data

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

**Standard Products**
- **Ocean Color (OC) Product Suite**
  - **astr** 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
  - **al** Instantaneous Photosynthetically Available Radiation
  - **nflh** 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
- **bb** Total Backscattering
- **ash** Absorption due to Phytoplankton
- **adj** Absorption due to gelbstoff and detrital matter
- **bop** Particulate Backscattering

**Data Comparison**
- **Nighttime Scene Level-2 SST**
  - Minimum: 0.0967
  - Mean: 0.3495
  - Sigma: 0.1383

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

**Statistics**

**Pixel Extraction**

International Ocean Color Science Meeting (IOCS)
Busan, South Korea, April 9-12, 2019

SeaDAS Version: 7.5.3
SeaDAS Web: seadas.gsfc.nasa.gov
NASA Ocean Color Web: oceancolor.gsfc.nasa.gov