PrimeWater

H2020-SPACE-2019
Research and Innovation Action

Satellite-derived chlorophyll-a concentrations for Lake Mulargia (Sardinia, Italy) using Mixture Density Networks and Landsat 8 imagery

CHL_it_sardinia_NASA_XXXXXXXX_000000_LSAT8_m0030_32bit.tif

The project has received funding from the European Union's Horizon 2020. Research and Innovation Programme under Grant Agreement No 870497.

European Commission

General

Description

This dataset contains satellite-derived chlorophyll-a data of Lake Mulargia (Sardinia, Italy) for the period 21 Mar. 2013 - 01 Feb. 2021. Chlorophyll-a concentrations have been calculated using Mixture Density Networks and Landsat 8 imagery.
Mixture Density Networks are a class of neural networks that tackle the inverse problem by modelling the multimodal distribution of target variables using a mixture of Gaussians.

Parameters

Chl-a

Unit

µg/l

Coordinate reference systems

UTM / WGS88

Data type

GeoTIFF

Keywords

Remote_Sensing, Landsat 8

Public repository link

https://zenodo.org/record/6783196

Contact

Pahlevan, Nima
NASA

Dataset coverage

Spatial coverage

Lake

Spatial resolution

37.19 m

Temporal coverage

21/3/32013 - 01/2/2021

Temporal resolution

Occasionally

Usage

License conditions

CC-BY-4.0

Citations and Acknowledgements

Scientific Citations

-Pahlevan, N., Smith, B., Alikas, K., Anstee, J., et al. (2022). Simultaneous retrieval of selected optical water quality indicators from Landsat-8, Sentinel-2, and Sentinel-3. Remote Sensing of Environment, 270, 112860
-Smith, B., Pahlevan, N., Schalles, J., et al. (2021). A Chlorophyll-a Algorithm for Landsat-8 Based on Mixture Density Networks. Frontiers in Remote Sensing, 1
-Pahlevan, N., Smith, B., Schalles, J., et al. (2020). Seamless retrievals of chlorophyll-a from Sentinel-2 (MSI) and Sentinel-3 (OLCI) in inland and coastal waters: A machine-learning approach. Remote Sensing of Environment, 240, 111604

Lineage statement

Original data source

NASA

Limitations on public access

Accessible and confidential data

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EMVIS S.A. | National Research Council of Italy | Swedish Meteorological and Hydrological Institute | EOMAP GmbH & Co.KG | International Water Association | Burgundy School of Business | Ente Acque della Sardegna | US Environmental Protection Agency | Commonwealth Scientific and Industrial Research Organization | Melbourne Water | SatDek

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