

JRC Dataset

EMIS - MODIS-AQUA Monthly climatology sea surface diffuse attenuation coefficient at 490nm (2km) in m^{-1}

Description:

Water Transparency (Diffuse attenuation coefficient at 490nm, K_d490 in m^{-1}): The diffuse attenuation coefficient K_d490 measures the light penetration in the water column at the blue-green wavelengths (ca. 490 nm). It represents a good indicator of water transparency resulting from the combined action of absorption and backscattering by the water constituents, and the structure of the surrounding light field.

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Keywords:

Diffuse attenuation coefficient climatology, Environmental monitoring facilities, GIS digital format, Oceanographic geographical features, Protected sites, climate change, coastal environment, environmental data, marine environment, marine monitoring, ocean color, satellite observations, sea water protection

Related resources:

Data access

EMIS - Download access (EMIS_A_K490)

Direct NetCDF download

<http://emis.jrc.ec.europa.eu/emis/satellite/2km/climatology/>

Additional information:

Last Modified: 2013-06-11

Issue date: 2013-08-29

Landing page: <http://emis.jrc.ec.europa.eu/>

Temporal coverage: From: 2002-07-01 – To: 2012-12-31

Language: English

Data theme(s): Environment

EuroVoc domain(s): 36 SCIENCE; 52 ENVIRONMENT

EuroVoc concept(s): environmental monitoring; ocean; oceanography; protected area

Identifier: <http://data.europa.eu/89h/63a19ff8-25f5-435f-9121-71fa51b13dcf>

Geographic information:

Lineage: General information : Monthly climatology sea surface diffuse attenuation coefficient at 490nm in m^{-1} (log10 scalling) derived from the MODIS-AQUA sensor. Processing information: $K_d(490)$ data is processed using SeaDAS 6.4 software and the standard algorithm for $K_d(490)$ (Werdell 2005). Temporal characteristics: This dataset consists of standard monthly climatology sea surface $K_d(490)$ maps at 2km resolution (L3 product). Description of observation methods/instruments: The remote sensing of 'Ocean Colour' represents a measure of the spectral variations in the light leaving the water surface, subsequently interpreted in terms of concentrations of optically-significant constituents in the water. The electromagnetic signal collected by the sensor on-board the satellite is largely determined by photons that have never reached the water surface, but have been backscattered within the atmosphere through multiple interactions between gas molecules and aerosols. After removing the

atmospheric contribution, the water leaving radiance recorded at a given time by the satellite reflects the optical properties of the water which, in turn, mirrors a specific structure and biogeochemical composition of the marine waters. The satellite-derived reflectance at the air-sea interface is related to apparent optical properties of the water constituents including $K_d(490)$. Quality/accuracy/calibration information: The algorithm is an empirical band-ratio formula, with retrieval standard error and r^2 (for log-transformed data) of 0.28 and 0.89, respectively, as calculated over the development in situ data set (Werdell 2005). References: Werdell, P.J. (2005). Ocean color K490 algorithm evaluation. http://oceancolor.gsfc.nasa.gov/REPROCESSING/SeaWiFS/R5.1/k490_update.html Other contextual information: The product is stored in NetCDF data and available for download.

Geographic bounding box: 70.0° N, 42.0° E, 10.0° S, -30.0° W

Coordinate Reference System: ETRS89