

JRC Dataset

EMIS - PATHFINDER Monthly anomalies sea surface temperature (4km) in degree-C

Description:

Monthly anomalies sea surface temperature (in degree-C at 4km resolution) derived from the PATHFINDER sensor (Satellite remote sensing Ocean color data): Sea surface temperature is the temperature of the water close to the sea surface. SST is a standard product from satellite-based thermal infra-red sensors, and optical sensors complemented with infrared bands.

Contributors:

- Melin, Frederic frederic.melin@ec.europa.eu

How to cite:

Melin, Frederic(2013): EMIS - PATHFINDER Monthly anomalies sea surface temperature (4km) in degree-C. European Commission, Joint Research Centre (JRC) [Dataset] PID: <http://data.europa.eu/89h/c99b539d-f2cb-43a7-b8b5-e2185c1edd93>

Keywords:

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 surface temperature anomalies, sea water protection

Related resources:

Data access

EMIS - Download access (EMIS_P_ANO_SST)

Direct NetCDF download

<http://emis.jrc.ec.europa.eu/emis/satellite/4km/anomalies/>

Additional information:

Last Modified: 2013-06-11

Issue date: 2013-08-29

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

Temporal coverage: From: 1981-09-01 – To: 2009-12-31

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/c99b539d-f2cb-43a7-b8b5-e2185c1edd93>

Geographic information:

Lineage: General information: Monthly anomalies sea surface temperature (SST) in deg. Celsius (degree-C) derived from the NOAA - Advanced Very High Resolution Radiometer (AVHRR) satellite series. Processing information: The data correspond to a re-analysis of the AVHRR data stream conducted by the University of Miami's Rosenstiel School of marine and atmospheric science (RSMAS) and the NOAA National Oceanographic Data Centre (NODC). SST is calculated according to a nonlinear SST (NLSST) algorithm originally described in Walton et al. 1998.

Temporal characteristics: the data consist of 9km-binned monthly SST (in degree-C) extracted from the version 5.2 AVHRR Pathfinder project. Time series covers three decades from Sept. 1981, and is regularly updated. Description of observation methods/instruments: AVHRR is a broad-band scanner, sensing from 0.6 μm to 12 μm , in the visible, near-infrared, and thermal infrared portions of the electromagnetic spectrum. The sensor is carried on NOAA's

Polar Orbiting Environmental Satellites (POES) series, starting with TIROS-N in 1978. The latest sensor is AVHRR/3 on NOAA-19 platform, launched in Feb. 2009. The strength of infrared radiations emitted by the ocean surface is a function of the temperature, i.e. the higher the temperature, the greater the radiant energy from the sea surface. SST is thus retrieved after correcting the water-surface emitted signal from the contribution due to the atmosphere. The processing includes a cloud screening procedure to avoid cloud temperature contaminated pixels. Quality/accuracy/calibration information: The satellite-derived SST product represents the 'skin temperature', that is the temperature of the top millimeters of the ocean surface. Comparisons with field measurements of bulk and skin temperature resulted in an absolute uncertainty of <0.2K. References: CC Walton et al. 1998. The development and operational application of non-linear algorithms for the measurements of sea surface temperatures with the NOAA polar-orbiting environmental satellites. *J. Geophys. Res.* 103 (C12): 27999-28012. KA Kilpatrick et al. (2001). Overview of the NOAA/NASA Advance Very High Resolution Radiometer Pathfinder algorithm for sea surface temperature and associated matchup database. *J. Geophys. Res.* C106:9179-9197.

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

Coordinate Reference System: ETRS89