

# SEA SURFACE TEMPERATURE PRODUCT

## Description

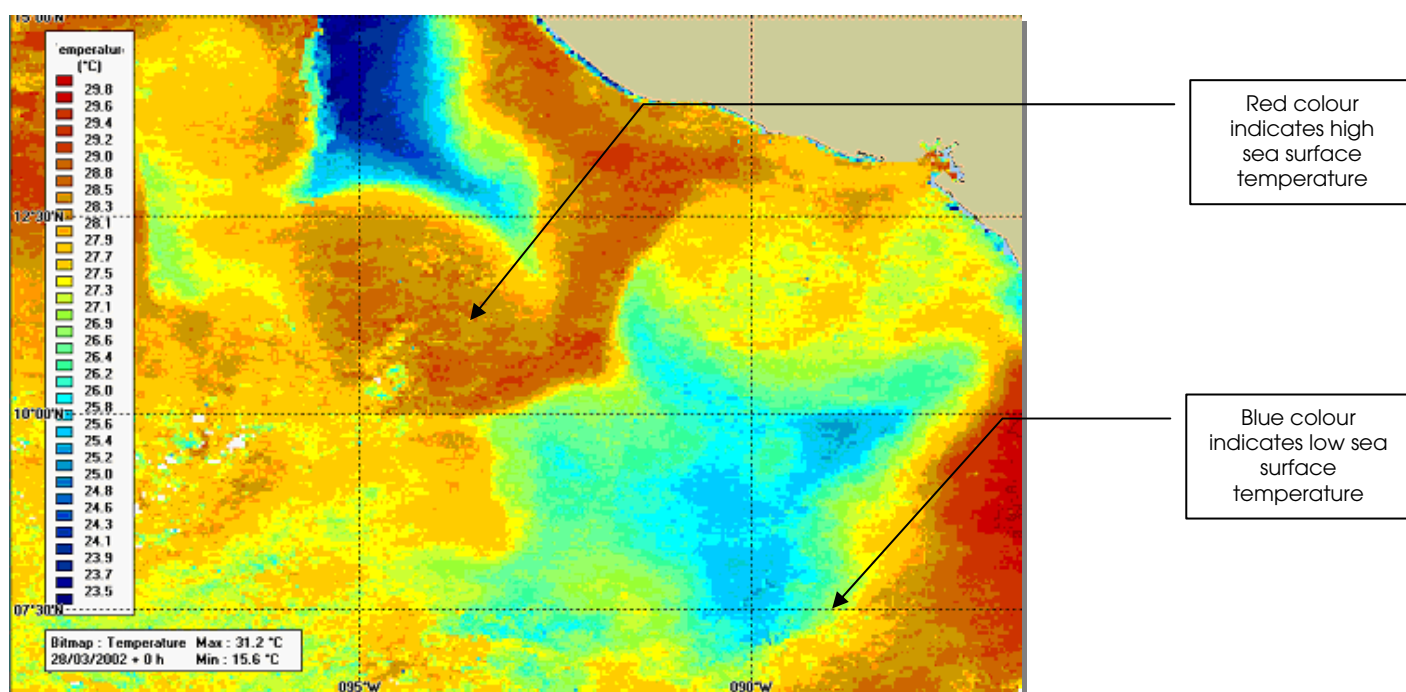
Since 1990, the Space Oceanography Division of CLS has developed a unique expertise in the processing and valorisation of the altimetry measurements. To broaden its space oceanography experience CLS is developing new products.

Deduced from remote sensing measurements, the Sea Surface Temperature –SST- provides new useful information for the user at sea.

## Ocean colour products

On NOAA satellites, onboard instrument measure the thermal infrared radiation from ocean and earth surfaces at different frequencies. These data are processed by specific algorithm to supply spectral images of the oceans.

Sea surface temperature offshore Central America coasts – El Salvador area



- These images are processed to supply maps of SST
- The SST is one of the most stable of key geographical variables inducing global climate changes
- The SST is very useful to characterize the heat transfers over the ocean at global and local scales
- With the first generation of remote sensing instruments of SST, no measurement are available if clouds occur
- Today, CLS is processing a new generation of instruments which are enable to measure SST through clouds

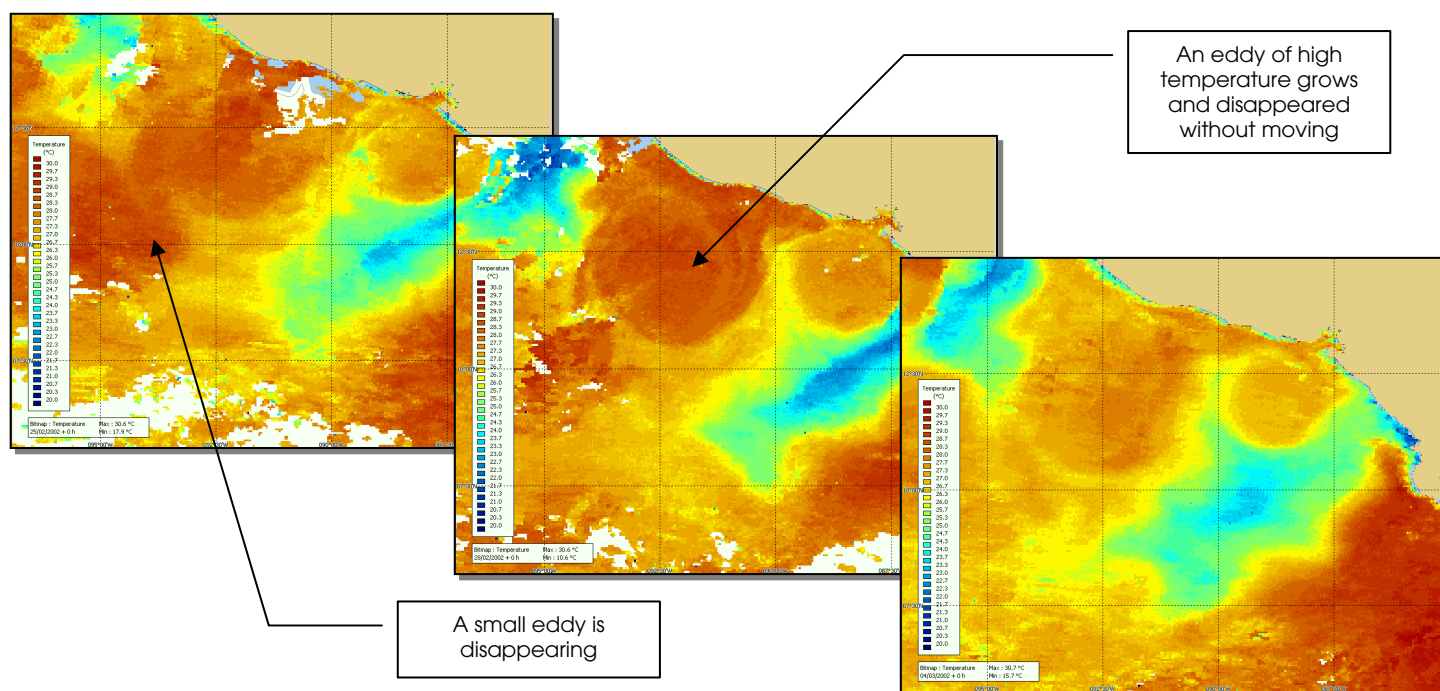
## Products

Maps of SST allow the user to detect and quantify with accuracy:

- oceanic fronts
- upwelling and eddies
- homogeneous water masses

Over the time the small-scale variations such as eddies motion can be followed.

## Semi weekly maps of OC along El Salvador coastlines



An eddy of high temperature grows and disappeared without moving

A small eddy is disappearing

## Applications

Today, commercial projects, essentially dedicated to fisheries, have started. The capability of SST products (with high spatial precision and quick time acquisition) is reliable for a better understanding of the oceanic motions at global and local scales

At the present time to main activities are supplied with SST products:

- the fishing industry (CLS product: CATSAT)
- the offshore industry (ESA project: EMOFOR)

## Operational mode

Two types of data are available

### ATSR products

- Available twice a week
- Resolution 4km x 4km
- Coverage: global
- Affected by the presence of clouds (no data available)
- But processing techniques taken into account time information minimize the influence of clouds

### TMI products

- Available twice a week
- Resolution 30km x 30km
- Coverage: 40°S to 40°N
- Not affected by clouds
- Very useful in tropical areas where clouds are often present

- Further efforts are in progress to extend the coverage by combining more satellite data (such as AATSR on ENVISAT)

## Contact points

Web sites:

- [http://www.cls.fr/html/oceano/welcome\\_en.html](http://www.cls.fr/html/oceano/welcome_en.html)
- <http://www.catsat.com>

E-mail:

- [Phillippe.Gaspar@cls.fr](mailto:Phillippe.Gaspar@cls.fr)
- [Jean-Yves.Lebras@cls.fr](mailto:Jean-Yves.Lebras@cls.fr)
- [Fabien.Lefevre@cls.fr](mailto:Fabien.Lefevre@cls.fr)