

OCEAN COLOUR PRODUCT

Description

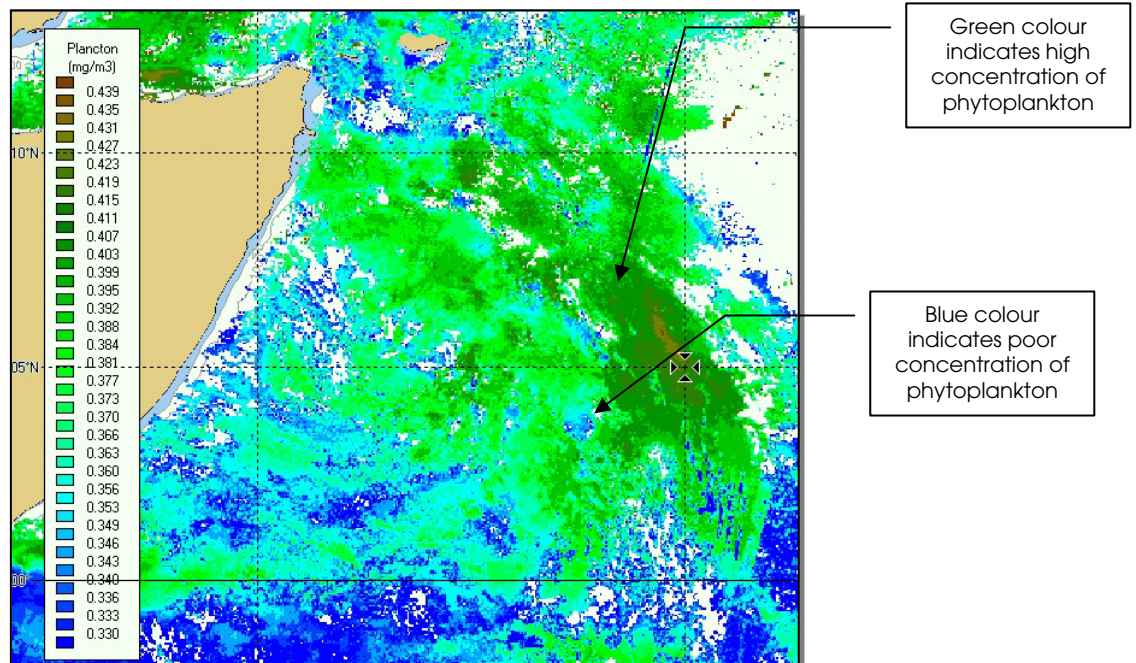
Since 1990, the Space Oceanography Division of CLS has developed a unique expertise in the processing and valorization of the altimetry measurements. To broaden its space oceanography experience CLS is developing new products.

Deduced from remote sensing measurements, the Ocean Colour -OC- provides new useful information for the user at sea.

Ocean colour products

Onboard Vegetation instrument on SPOT 4 satellite measures the solar reflected radiation from the oceans and earth surfaces at different frequencies (visible and near infrared range during daytime). These data are processed by specific algorithms to supply spectral images of the oceans.

Map of OC in the Somalia - Socotra area



- These images are processed to supply maps of OC
- These maps provide values of ocean pigments concentration
- These pigments are representative of the phytoplankton biomass which is included in the first meters of the ocean depth
- Pigment distribution depends on the water masses position
- The concentration of phytoplankton is highly correlated with horizontal and vertical oceanic motions

Products

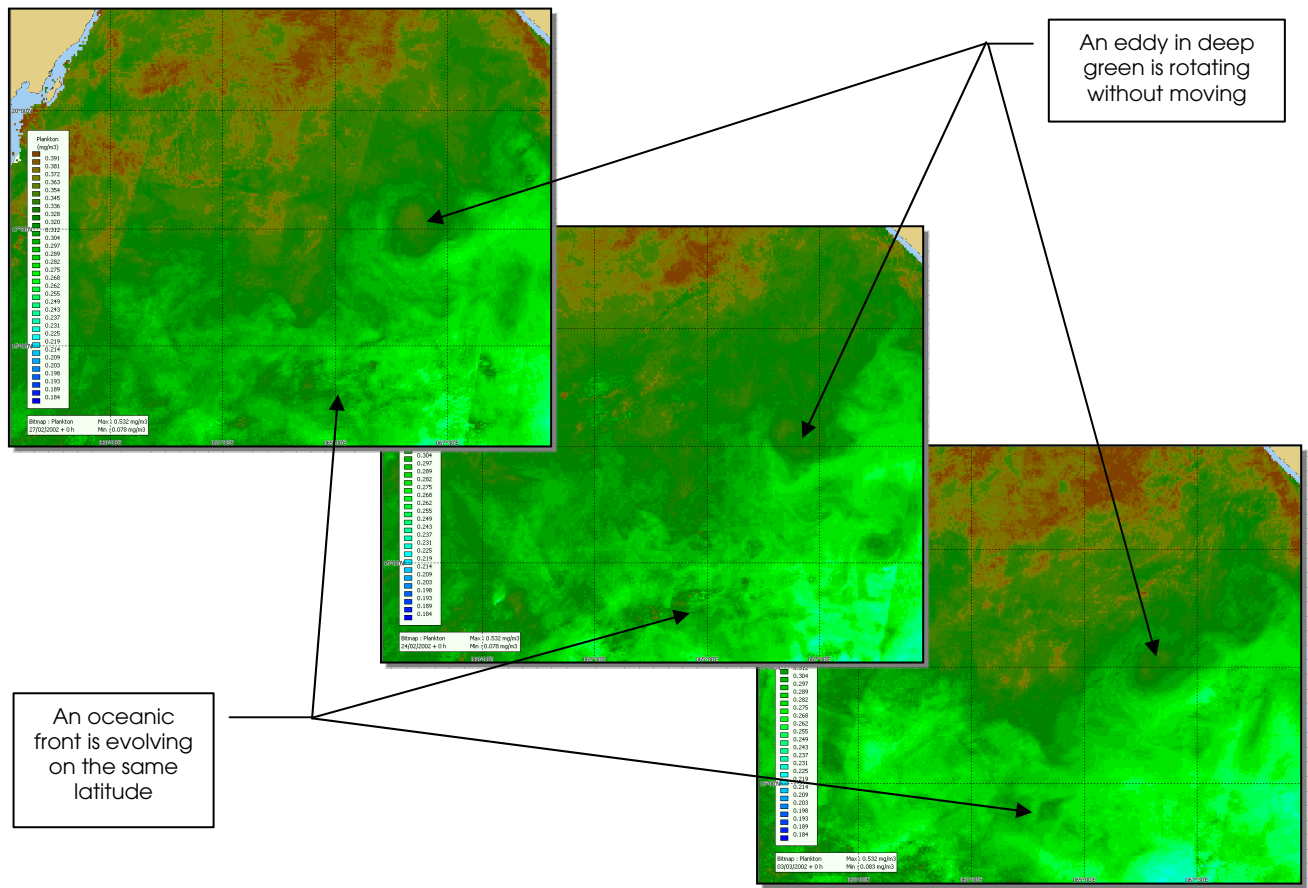
Maps of OC allow the user to detect and quantify with accuracy:

- phytoplankton content
- oceanic fronts
- upwelling and eddies

No measurement are available if clouds are present. But the precision of the measurements (a few kilometres only) provides a reliable knowledge of the small scale oceanic features.

Over the time the oceanic small-scale variations such as eddies motion or upwelling intensity can be followed.

Series of twice weekly maps of ocean colour (Arabian Sea)



Applications

Today, commercial projects, essentially dedicated to biological processes, have started.

The capability of OC products to detect and track oceanic features with high spatial precision and quick time acquisition is reliable for a better understanding of the oceanic motions at global and small scales.

At the present time two main activities are supplied with OC products:

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

Operational mode

- Maps of OC are computed from Vegetation measurements
- They are available on regular Cartesian grids (0.04° x 0.04°) grid twice a week
- The spatial coverage is mainly focused on equatorial and tropical areas and a few coastal regions
- Further efforts are in progress to extend the coverage by combining more satellite data (such as MERIS on ENVISAT or POLDER on ADEOS)

Contact points

Web sites:

- http://www.cls.fr/html/oceano/welcome_en.html
- <http://www.catsat.com>

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