Surface and Upper Ocean Circulation from the combined use of in situ and spaceborne observations

GLOBAL 3D Ocean Temperature, Salinity and Geostrophic currents

CMEMS References:
MULTIOBS_GLO_PHY_NRT_015_001
MULTIOBS_GLO_PHY_REP_015_002

1/4° horizontal resolution (0-5500m) on 33 levels
Weekly / Monthly
NRT (7D)
REP: 1993-2018

Validation of the equatorial currents

MULTIOBS (2013 mean, 170°W)
Cravatte & al., JPO 2017

GLOBAL 2D Ocean surface and near-surface currents

1/4° horizontal resolution
2 levels: 0m, 15m
NRT: 6-hourly / daily / monthly
REP: 3-hourly / daily / monthly
NRT (1D)
REP: 1993-2018

CMEMS References:
MULTIOBS_GLO_PHY_NRT_015_003
MULTIOBS_GLO_PHY_REP_015_004

Validation: Comparison with OSCAR, versus SVP drifters

Improved currents from the synergy between altimeter velocities and SST

• ERA-5 Wind stress fields
• New Altimetry derived Geostrophic Currents (Taburet et al., 2018)
• New CMEMS SL MDT
• New Ekman model formulation using MLD (Rio et al., 2019)

Application for marine resources study

Elephant Seal tracks (black) match very well with micronekton biomass in mesopelagic layer estimated from SEAPODYM model forced by MULTIOBS
26 Nov 2011

Next version ➔ November 2019

Complementary to ocean state estimate provided by modelling/assimilation systems, a multi observation-based approach is available through the MULTIOBS References (CMEMS) Thematic Assembly Center (TAC) of the Copernicus Marine Environment Monitoring Service (CMEMS). CMEMS MULTIOBS TAC proposes Qualified Global Ocean products based on satellite & in situ observations and state-of-the-art data fusion techniques. These products are fully documented and, are distributed through the CMEMS catalogue (http://marine.copernicus.eu/services-portfolio). They are available in Near-Real-Time (NRT) or as Multi-Year Products (MYP) for the past 10 to 25 years.

(2 NRT – 2 MYP) MULTIOBS products are dedicated to ocean currents. Satellite observations (GOCE Geodetic, altimetry SLA, multi-satellite SST, SMOS SSS), in situ observations (Argo floats & surface drifters), but also model wind stress (ECMWF) associated with data fusion techniques are used to generate these 3D & 2D ocean velocities.