Geophysical Research Abstracts Vol. 17, EGU2015-9548, 2015 EGU General Assembly 2015 © Author(s) 2015. CC Attribution 3.0 License.



An overview of new insights from satellite salinity missions on oceanography

Nicolas Reul

IFREMER, Laboratoire d'Océanographie Spatiale, Plouzané, France (nreul@ifremer.fr)

The Soil Moisture and Ocean Salinity (SMOS) mission, launched on 2 November 2009, is the European Space Agency's (ESA) second Earth Explorer Opportunity mission. The scientific objectives of the SMOS mission directly respond to the need for global observations of soil moisture and ocean salinity, two key variables describing the Earth's water cycle and having been identified as Essential Climate Variables (ECVs) by the Global Climate Observing System (GCOS).

After five years of satellite Sea Surface Salinity (SSS) monitoring from SMOS data, we will present an overview of the scientific highlights these data have brought to the oceanographic communities. In particular, we shall review the impact of SMOS SSS and brightness tempeaerture data for the monitoring of:

-Mesoscale variability of SSS (and density) in frontal structures, eddies,

-Ocean propagative SSS signals (e.g. TIW, planetary waves),

-Freshwater flux Monitoring (Evaportaion minus precipitation, river run off),

-Large scale SSS anomalies related to climate fluctuations (e.g. ENSO, IOD),

-Air-Sea interactions (equatorial upwellings, Tropical cyclone wakes)

-Temperature-Salinity dependencies,

-Sea Ice thickness,

-Tropical Storm and high wind monitoring,

-Ocean surface bio-geo chemistry.