



Observing the ocean with different platforms/methods. Advantages, disadvantages and lessons learnt

George Petihakis (1), Manolis Potiris (1), Manolis Ntoumas (1), Kostas Frangoulis (1), Kostas Tsiaras (2), George Triantafyllou (2), and Annika Pollani (2)

(1) Hellenic Centre for Marine Research, Institute of Oceanography, Iraklion - Crete, Greece, (2) Hellenic Centre for Marine Research, Institute of Oceanography, Anavyssos - Attiki, Greece

Methods for observing/measuring the ocean, present remarkable diversity. In situ sampling or remote sensing, automated or not measurements with sensing probes, utilize different measuring principles, sample different parts of the system, are characterized by different accuracy/precision and sample over a large range of spatial and temporal scales with variable resolution. Measurements, quite often are dependent on the platform design and the platform interaction with the highly variable ambient environment. To add to the aforementioned issues that render the combination of data from different sources challenging from a scientific perspective, there are also a number of technical and data issues. These are important for the good operational status of the platforms, the smooth data flow and the collection of appropriate meta-data. Finally the raw data files need to be processed into a user friendly output format so the operator will be able to identify as early as possible sensor drift and failures. In this work, data from different observation platforms/sensors is analysed and compared, while mechanisms and processes responsible for differences are identified. More detailed, temperature, salinity and chlorophyll data from four fixed observing stations, one Ferry Box, satellites and a monthly in situ sampling program, is used. Main results indicate that a) regular calibration according to expected parameter range and well-defined, consistent deployment plan of proven sensors is sufficient for acquiring high quality data in the long term. Better knowledge of site specific response of new instrumentation is required for producing consistent long term data b) duplicate sensors on one platform considerably improve data flow and data quality c) if an area is sampled by multiple platforms, then platform dependent errors can be quantified d) fixed point observatories are efficient tools for assessing regional performance of satellite products. Higher vertical and temporal sampling rate of the upper 20m of the water column increase inter-comparability between the two platforms e) delayed mode, lower processing level data/meta-data should be archived and disseminated in addition to standard formatted files due to analysis artifacts and loss of information during transmission and processing.