Time variability on hydrology and biogeochemistry induced by mesoscale eddies in the Algerian Basin: a one year high resolution and multiplatform experiment.

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In the framework of the ELISA project (1997-1998, MAST-3/MTP/MATER program) 1-year high frequency time series were acquired at fixed points in the Algerian Basin, an open sea area of the Mediterranean sea (3000m). This multidisciplinary and multiplatform experiment was dedicated to study the algerian eddies and their influence on general circulation and on biological phenomena. During 3 main cruises, 2 specific Anticyclonic Eddies (AEs) tracked by satellites images during 4 years were mainly studied by mean of vertical sections, performed inside AEs and in the surrounding smaller structures such as sub-mesoscale filaments and small-scale shear eddies. These sections helped describing the hydrological and biogeocheminal structures of eddies according to the seasons and the surrounding dynamics, knowing their historical circulation in and/or out of the Algerian Current. With benefit of this first stage of the study, when an AE flowed throughout a 9-mooring network (lines 50 km-spaced), including 50 currentmeters down to the bottom, it is possible to comprehend its signature at fine spacio-temporal scale. The presented analysis will focus on the temporal signal induced by these eddies recorded on 4 autonomous CTD/Fluorometers, located in the central mooring of the network, in the upper layer. The temporal analysis will apply recent analysis methods like the Empirical Mode Decomposition that works with gappy records, and help filtering the data as well. This study will show how much the seasonal signal and the (sub)mesoscale-induced time variability can be comparable in this area. It will also explain how eddies history can play a role in the observed signature at a given time.