PEACETIME: MISSION ACCOMPLISHED

The 40 scientists who embarked the PEACETIME cruise all did an amazing work during that month at sea. The campaign departed on May 10 and ended on June 11 at the La Seyne harbor. All the work envisaged upstream has been achieved. In terms of operation at sea:

- 90 profiles with the classical CTD-rosette loaded with optical instruments were done for sample collection for the measurement of stocks and biological and chemical fluxes (including Hyperbaric conditions) and Physical characterization of the water column

- Samples were collected in 'ultra trace' conditions thanks to 27 profiles with the "clean" rosette: measurements of metals could be made on board (Aluminum and dissolved iron) indicating the regions impacted by atmospheric Saharan deposits (note that this work is done within the framework of the international program GEOTRACES as PEACETIME is endorsed as a process-study for this program).

- The zooplankton biodiversity will be studied through 27 nets tows along the transect.

- The micro-layer, which is the area of the interface between the atmosphere and the ocean, could be sampled 17 times from a rubber boat and will be characterized from a biological and chemical point of view.

- An innovative system of continuous "clean" pumping at 5 m under the boat thanks to a large peristaltic pump allowed to automatically characterize chemically, biologically and physically (including optical measurements) the surface seawater throughout the whole transect. The water flushed in a dedicated laboratory has also been studied continuously with regard to its particle and gas emission properties in order to study the feedbacks from the ocean to the atmosphere.

- Air sampling was carried out throughout the whole campaign using a dedicated container to monitor continuous air composition, parameters of atmospheric dynamics such as boundary layer, and radiative parameters (incident radiation, Optical thickness, optical properties of the particles). In addition to these continuous sampling, 3 rains were collected and analyzed during the campaign, including the expected rainfall in FAST ACTION station.

Several float-profilers and lagrangian drifters have been retrieved / dropped during the journey: they will allow us to continue studying the system that we have characterized at a given moment. Three drifting moorings were deployed during the 2 long stations and the FAST station: the line was heavily loaded with different types of sediment traps, several types of instruments measuring in situ respiration and physical instrumentation: this will allow us to better understand the fate of matter between the surface and the deep waters, in particular the link between the deposits of Saharan dust and the export of carbon.

Another specific feature of PEACETIME was to embark 8 "climate reactors": those experimental devices reproduce on a small scale the air-sea exchanges under current and future environmental conditions (acidification and increase of the temperature of the sea water). Three experiments involving a large number of scientists on board (duration min = 5 days) were successfully conducted in 3 regions presenting distinct in situ characteristics.

Finally, thanks to our FAST ACTION strategy, which was thought well upstream of the campaign, we were able to observe in situ the deposit of Saharan dust and monitor the effects in the ocean and the feedbacks to the atmosphere for 6 days. We are expecting particularly original results from this FAST ACTION.

Daily news of the campaign were available on our Twitter account (114 tweet were posted during the campaign, still visible here: https://twitter.com/peacetimecruise)

We would like to thank again the captain and crew of the *Pourquoi Pas?* as it has been a real pleasure to work together on board of this great R/V.

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Website of the project: http://peacetime-project.org/