

Thursday, May 3, 2007
Weekly Report No. 3 (April 27 - May 3, 2007)

On Friday RV Polarstern is bunkering 500 t of fuel in Las Palmas and we are happily awaiting our shore leave. At 9 am the pilot is entering the ship; we are mooring at 10 and leave at 7 pm. This makes a full day of atmospheric and radiation measurements without ship movements. Unfortunately, because of air traffic we are not allowed to launch radiosondes despite ideal nearly cloud clear conditions. The island is first detected by the ozone concentration measurements of Samuels UV absorption spectrometer. Due to emissions of nitrogen oxides from car and industry exhausts the local ozone values decrease drastically. At local noon - when the islanders have lunch and don't drive their cars - the values are slightly recovering. We are back in civilization. As a matter of fact the air quality of Las Palmas, at least in the harbour area - is as bad as in big cities. The analysis of the nitrate isotopes from the aerosol samples will provide additional information regarding the local nitrate sources.

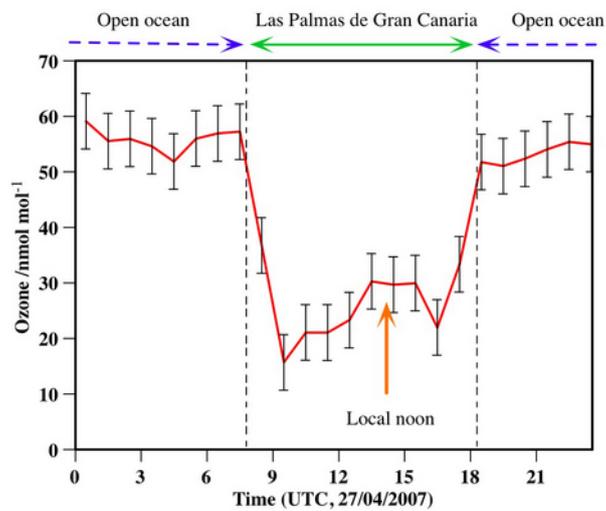


Fig 1: Temporal evolution of the ozone concentration before, during, and after the stay in Las Palmas (by Samuel Morin).

As of Friday the satellite radiometer IASI is operational again and we continue the additional radio soundings during the satellite overpass times. Until Saturday night we stay in the influence area of the NO trade winds with scattered cumulus clouds and occasional stratocumulus fields. The latter are the signs of the westerlies of the northern hemisphere. On Sunday we say goodbye to the Azores high pressure system and welcome the first cold front of a low pressure system over the Bay of Biscay. The following characteristic "backside weather" delivers the strong cumulus clouds with occasional showers. This is a new entry in our collection of cloud types along this cruise. On Monday the official final call takes place with the captain, the 1st Officer, the Chief Engineer, and the Chief Electronics. We all agree that the cruise went well without any problems and that we got along well, too.



Fig 2: Stormy Tuesday... (by Edmund Knuth)

Much to the surprise of our meteorologists and against all weather forecasts a small but intensive storm system has developed over the Bay of Biscay and hits us with full strength. The wake-up for breakfast is rather unpleasant. The microwave radiometer is still there but one of the security latching was ruptured and two others are close to break. Andi is tying them up again in a very professional manner and I get the opportunity to learn various seaman knots. Our data analysis is progressing and we obtain an overview of the overall change in our observations along our meridional crossing. As an example the change of temperature, radiation and wind direction is shown.

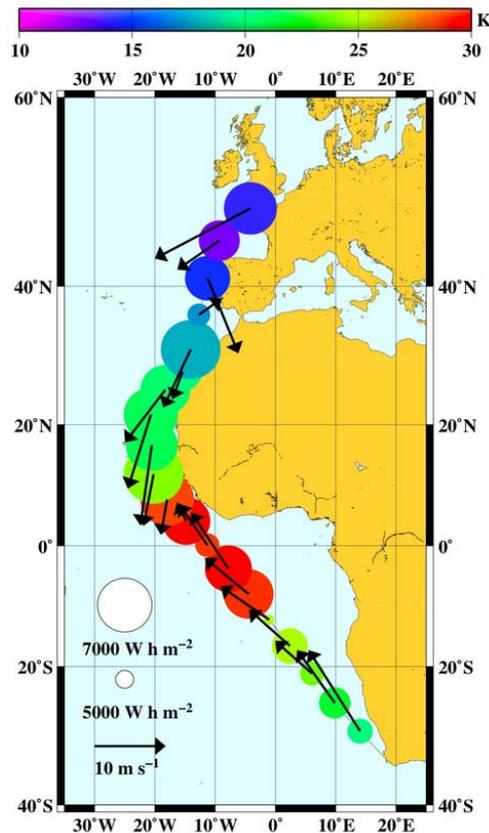


Fig. 3: Change of maximum temperature (color of circles), daily mean solar irradiation (size of circles) and wind direction (arrows), by Samuel Morin and Alexei Sinitsyn

Life on board: During the course of the week the end of our journey is announcing itself with messages concerning telephone- and email-bills, last sell on board and so on. Final reports are written.

Our seminar series ends with a double presentation concerning clouds and radiation measurements given by Alexei and John, and an introduction into the new Meteosat weather satellite given by myself. We get a guided tour to the ships engines and are very impressed. We also visit the kitchen and thank the cook on duty for the excellent food.

On Friday all instruments will be un-mounted and packed. Also the data stream from the ships meteorological sensors - very valuable data for us - will come to an end for this journey.

This ends the first large scale meridional atmospheric profiling and radiation measurements campaign that is performed on a ship. We will be back on April next year in the framework of OCEANET which makes the farewell a little easier for us.

Best regards on behalf of all,
Andreas Macke