

# R/V MARIA S. MERIAN

## Cruise MSM72

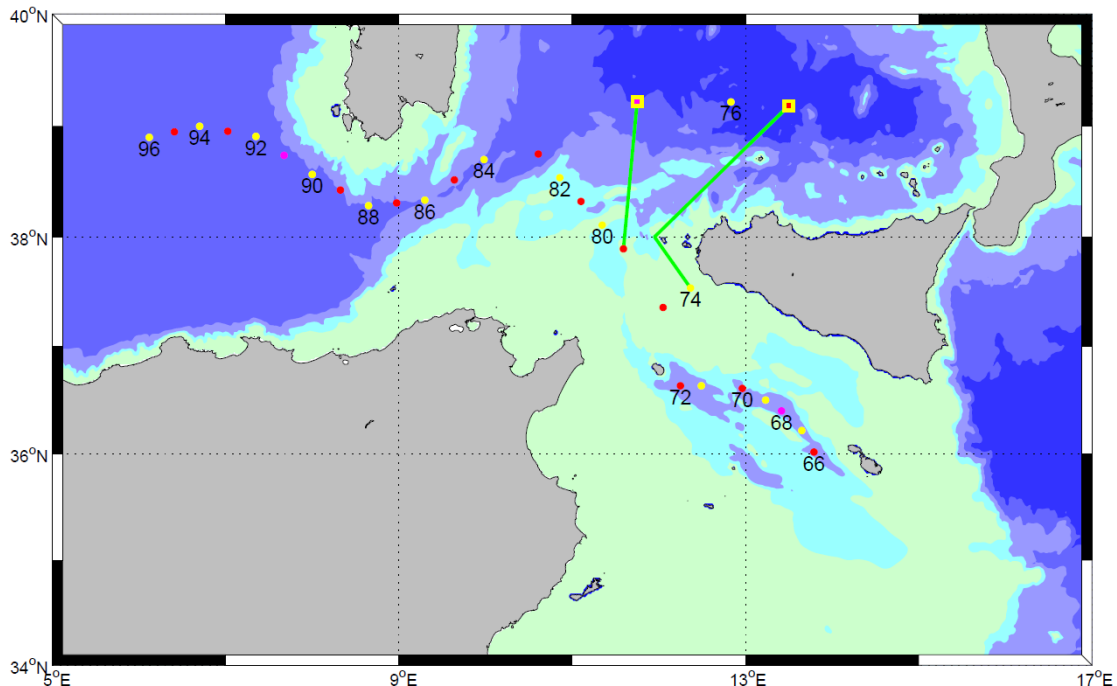
Heraklion – Cádiz

02.03.2018 – 03.04.2018

4<sup>th</sup> weekly report: 26.03.2018



The 4th week of our cruise led us at the beginning into the Strait of Sicily, where we took, as planned, every 2nd station biogeochemical water samples. Station 68 was doubled to get enough water for the additional isotope measurements. On the shelf, some of the uCTD profiles between the CTD stations had to be cancelled because the water depths were too shallow and the risk of losing the probe was too high. On Monday, March 19, we held a seminar in the afternoon to discuss the status of the work and first results. On Tuesday, March 20, the weather got so bad that we only ran the ship's 38 and 75 kHz ADCPs on our planned fine resolved section and no more uCTD casts. Our "half-time" party, which also took place that evening, was quite stormy in the truest sense of the word. But we didn't let the mood get spoiled. On Wednesday, 21.03, the CTD work was resumed with station 75 in the morning. At stations 75, 76 and 77 we had, which we have become meanwhile accustomed to, technical problems with the CTD. This time the adapter cable between rosette (MERIAN) and CTD (University of Hamburg) was faulty allowing water to penetrate. We changed the CTDs again and have been using the ship's CTD ever since. We have had problems with this CTD too, but luckily it's lasted so far.



*Fig. 1: Stations taken during the fourth week of the cruise. Red dots: CTD stations including chemical sampling. Magenta dots: CTD stations with two casts. Yellow dots: CTD stations without chemical sampling. Yellow squares: Additional deployment of ARGO Floats. Green lines: high resolved uCTD / ADCP measurements.*

At the end of station 75 another ARVOR float and at station 77 the last float planned for the cruise were deployed in heavy rain. On the morning of March 8th we made another fine resolved section with uCTD and ADCP. The wind had died down in the meantime, but it was raining all the more violently. Meanwhile we are west of Sicily.

We have evaluated some of our data, mostly uncalibrated, and received some preliminary results. An example for the thermosalinograph (Fig. 2) shows by means of the surface temperature and surface salinity distribution the influence of the salty and warm Levantine surface water (yellow: salty, blue: less salt, yellow: warm, blue cooler) to the eastern Ionian Basin, while colder and fresher Atlantic water reaches the eastern Mediterranean from the Strait of Sicily. We are comparing the thermosalinograph data with the CTD data (c). This allows at the end a quality control of the thermosalinograph data.

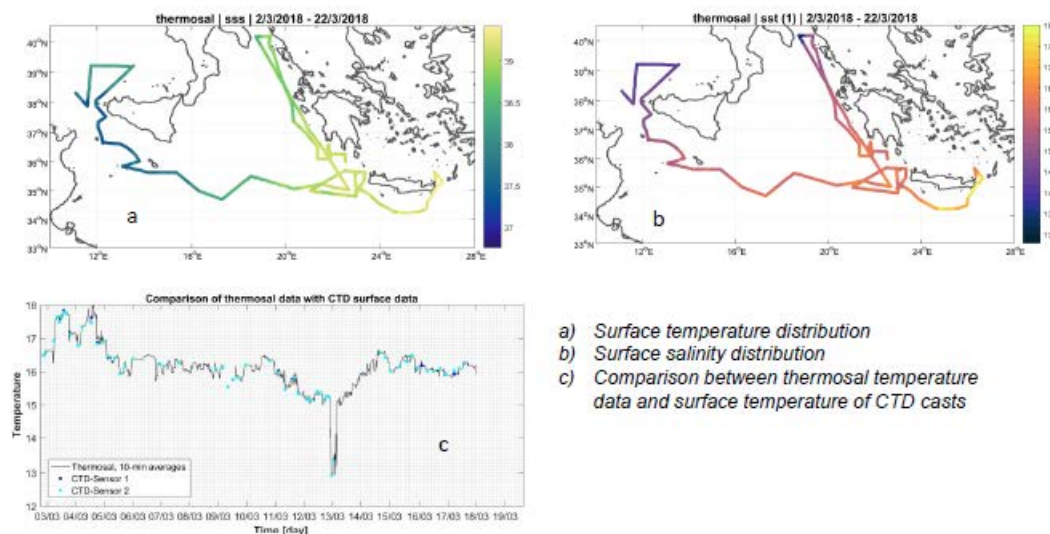


Fig. 2: Thermosalinograph data

Also for the biogeochemical data there are first results, here as an example the pH distribution south of Crete (Fig. 3, left picture: red-bordered stations). Clearly visible is a minimum in the Cretan Sea. Also in approx. 400-500m the pH distribution shows a minimum, which is presumably old bottom water moving up when it is replaced by denser, newer bottom water.

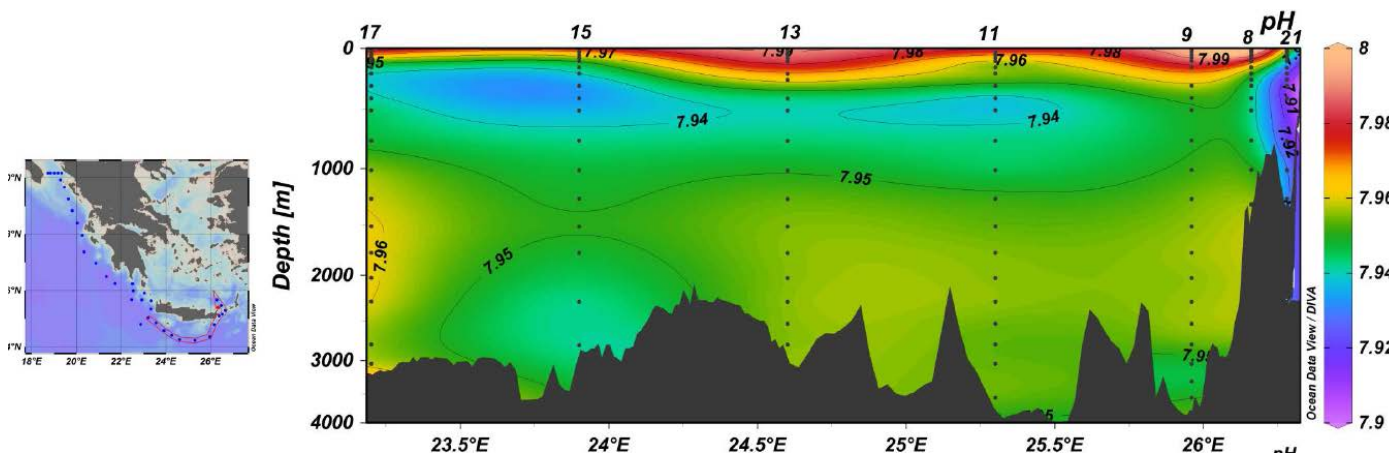


Fig. 3: Distribution of pH in the Cretan Sea and south of Crete. Left: Positions of stations are red bordered

Greetings on behalf of all scientists on board

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