



POSTRE-II

# M135

(01.03. – 08.04.2017)

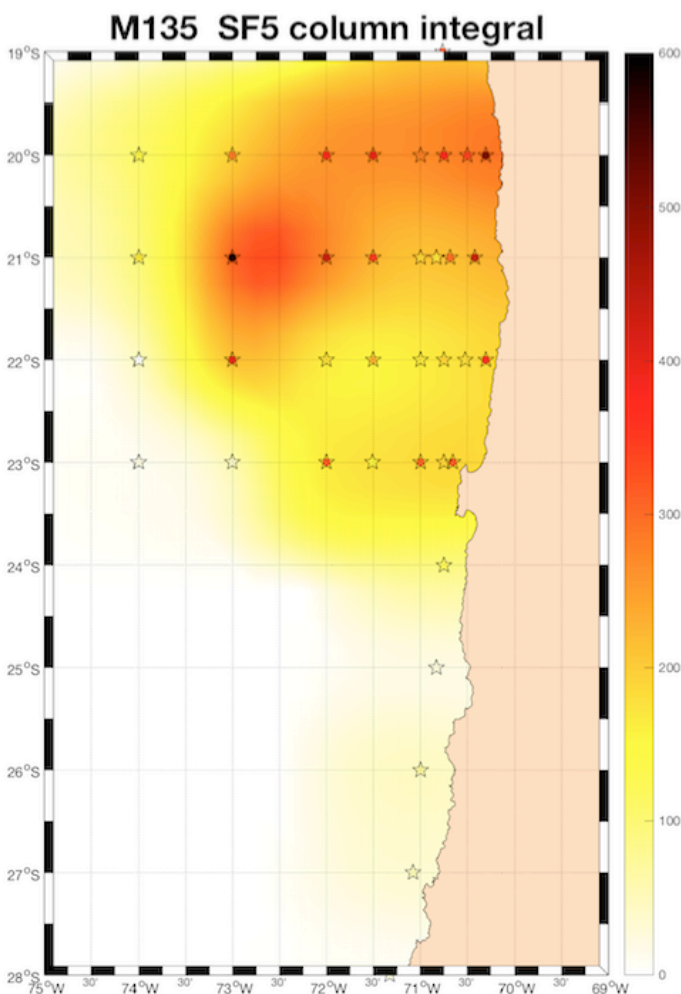


## 2. weekly report from 12. March 2017

The second week of the cruise was very successful. We began the more intensive areal survey of the tracer patch by a number of zonal section each of them 60 nm apart and from the coast into the open ocean at 74°W. Specifically we covered 23°, 22°, 21° und 20°S with a regular station spacing. On some sections we also deployed the trace metal CTD.

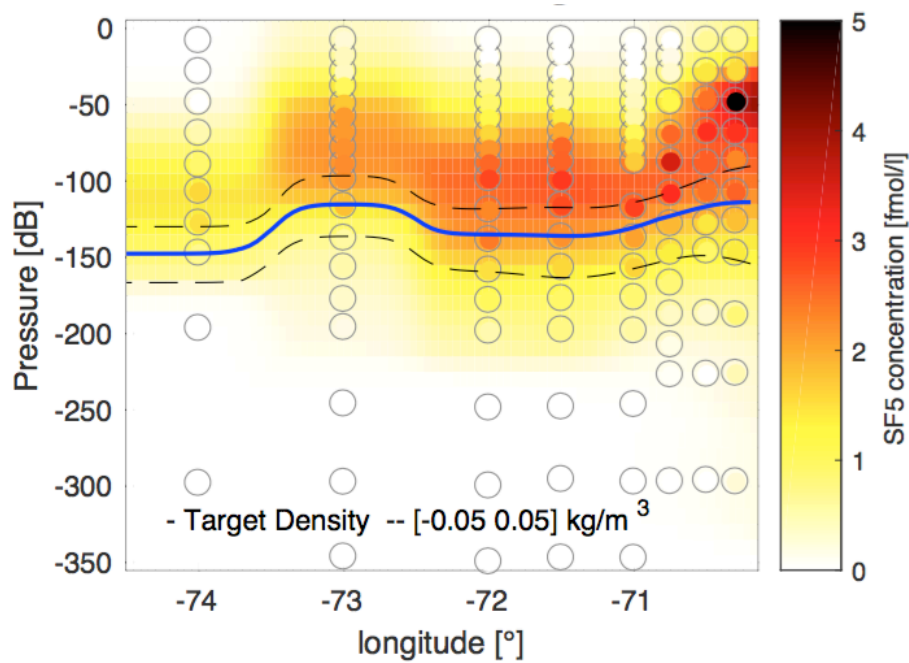
A key objective of the cruise is to document the dispersion of the tracer. At almost every station we find signals of the tracer with varying concentrations with up to 4 fmol (femta mol). We analyze the

sample on two gas chromatographic systems which works very efficient and allows us to obtain an excellent vertical resolution. This allow us to calculate to total tracer loading of the water column. As we have expected the tracer is largely distributed on the density surfaces it was injected into with the center at about 100m water depths. We did not find any tracer below 300m depths so far. However, we do find significant amounts of tracer in the 10m surface samples. This is somewhat unexpected, since the tracer begins outgassing at water depth shallower than 70m. Thus



Tracerdistribution south of 19°S. Stars denote the CTD station and the color the tracer column integral.

those regions with high surface values are an indication for active upwelling.



East-West transect along 20°S. The blue line denotes the average density of the tracer release. The black dashed lines the upper and lower bounds. The data are only preliminary calibrated.

A second program on the cruise has the objective to recover sediment cores. In order to find sediment that has good and steady accumulation we are actively surveying the sea floor with a subbottom echo sounder. This allows us to find



Renato Salvattecì, Sümeyya Eroglu and the Geologyteam during the sediment sampling.

promising locations. Indeed we were able to identify a promising location and deployed both a multicorer and gravity coring device. We were lucky and both systems recovered a wealth of sediment and an almost 6 m long core. Our analysis in

Kiel will tell us, how old the lower material was and if the core indeed has not missing times.



*Egrets and jellyfish are just some of the wild life we see in the ocean.*

The later summer season is still pleasant in the Southern Hemisphere with often some amounts of cloud cover. Near the coast the surface temperature are about 20°C while further off shore we found spots with 26°C.



*Once in a while we get a glimpse of the Atacama desert, its cities and mountain range.*

The mood on board remains excellent, the food is of excellent quality and the collaboration between us and the captain and crew is exemplary.

With the best regards from 19° S and 73° W,  
Martin Visbeck and the rest of the M135 team.