

**Group - Ocean Modelling and Data Assimilation  
Report  
18th October, 2016**

### **Questions session**

After the lectures of yesterday, we gathered all participants of the group for framing the questions about these lectures. We discussed among ourselves first regarding the different issues in which we have doubts with whatever expertise we had. Most interesting questions we had are as follow :

- What is the bio-ecological impacts on ocean when providing free forecasts to the fishermen which can result in over fishing ?
- What was the impact of having the Southern boundary of the ROMS simulations dividing the Agulhas currents into two ?
- How do we deal with the missing data point while doing data assimilation ?

The answers from the experts helped us gaining more understanding about the subject at the point.

### **Daily lectures**

We had three interesting lectures from different fields. The one which was very close to our group thematic was the lecture from Dr Alberto Carrassi on Data Assimilation. We thought it was a good idea to continue from Monday's lecture which gave us the flavour of the fundamentals about Data Assimilation to our group members who were not familiar with the concept. The most important aspect what we like is the 3DVAR - AUS (Assimilation in the Unstable Space) DA-scheme. With this scheme, we do not have to change the whole operational infrastructure where it is implemented with 3DVAR to get the on par accuracy with the advance Ensemble schemes.

The next lecture was the one from the Prof. Ola was about sea level variations in the Indian ocean and the impacts of Greenland ice sheet. The most alarming thing we learn was the last figure about the comparison between different large Ensemble model analyses of future Antarctic contributions to GMSL for different Representative Carbon Pathway (RCP) scenarios (RCP2.6, RCP4.5 and RCP8.5). "The findings add to a growing body of research that suggests that Antarctic ice is less stable than once thought" (DeConto & Pollard, 2016).

Our group was in a dissatisfaction tone about the poster presentation session. We believe that this session could have been organised in a way where we could have been given less time just to introduce the subject of our current study rather than presenting a poster in 5 minutes, which was inefficient. Instead we could have spent more time to interact about our work as a standard poster session.

The last lecture from Dr Anton was about the technicalities of data management in NERSC. The idea presented in the concept of Nansen Cloud about how to use the

data available in an efficient way for the scientists and end-users. The small introduction about python encourages us, as young scientists, to use the open-source computational softwares instead of the very expensive softwares like Matlab and etc.

It was a busy and fruitful day where we learnt a lot and we are looking forward to today's lecture :-)