



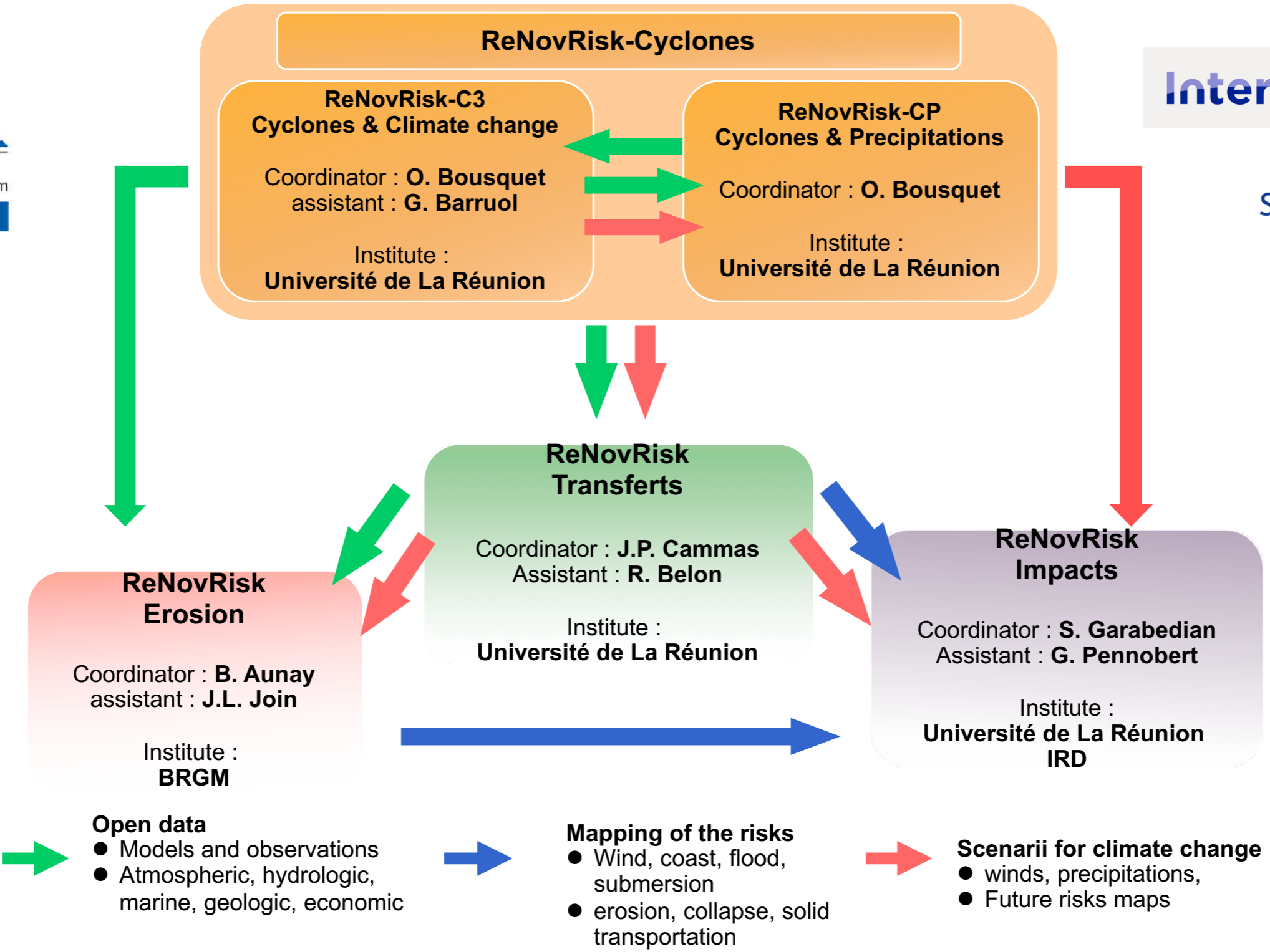
Journées Nationales Gliders 2019

Presentation of the Renovrisk-Cyclone Program (2017-2020) and preliminary results

Emmanuel Cordier / OSU-Reunion
09 septembre 2019



• Program RenovRisk GLOBAL



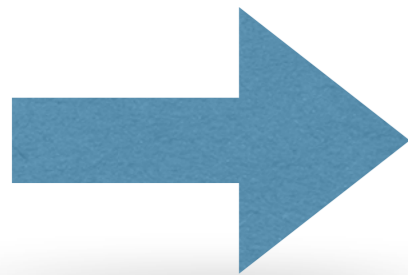
- **Program RenovRisk CYCLONE**

1/ **Numerical models** coupled
ocean-atmosphere-wave :
forecasting of rain, wind, swell

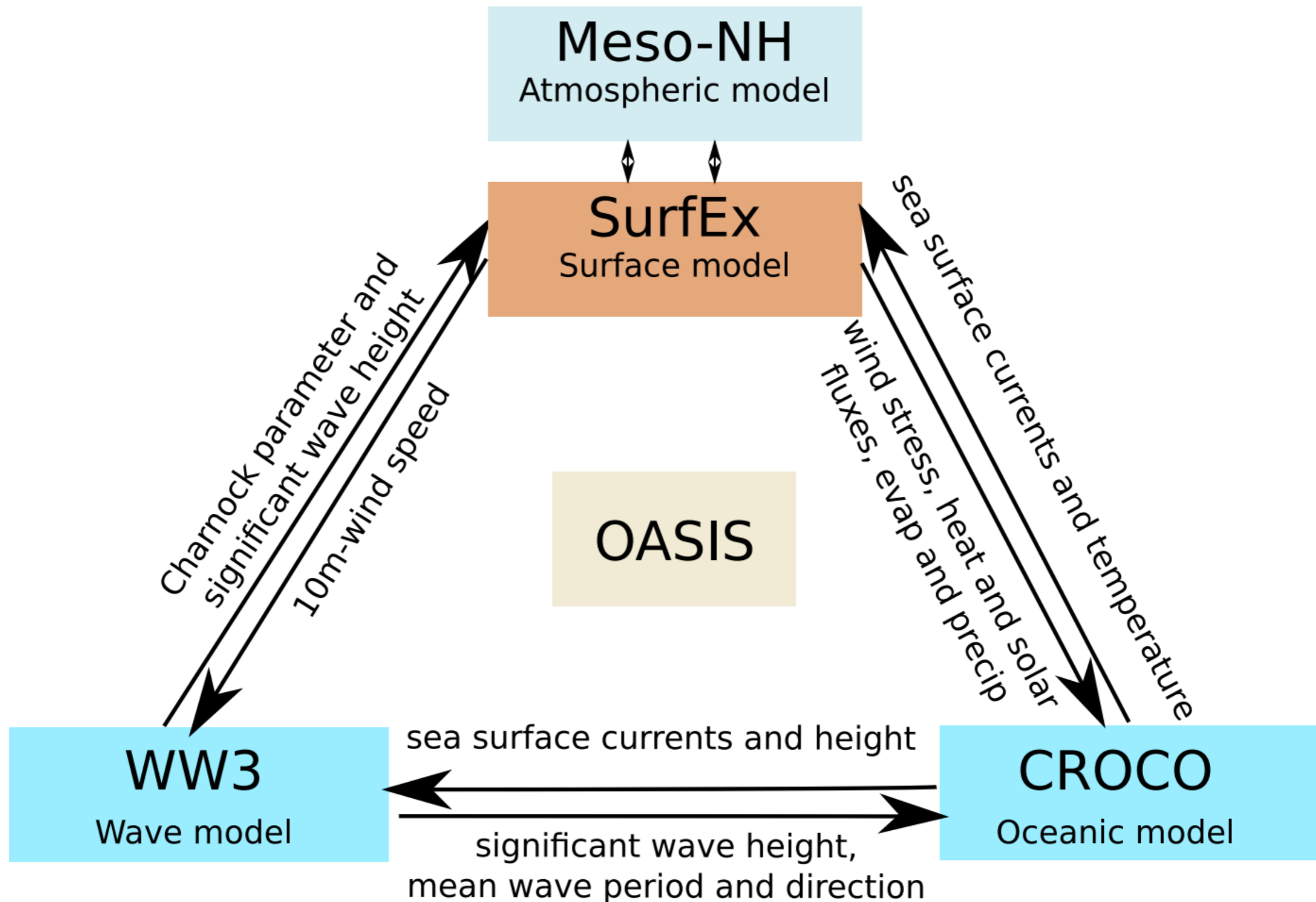
2/ **Observation** meteorological,
oceanographic.

3/ **Impact** of cyclones on land -
influence of climate change.

4/ **Regional Cooperation**



MODELING & OBSERVATION



TROPICAL STORM BEJISA 2013/12-2014/01



Journal of Advances in Modeling Earth Systems

RESEARCH ARTICLE A New Coupled Ocean-Waves-Atmosphere Model Designed for Tropical Storm Studies: Example of Tropical Cyclone Bejisa (2013–2014) in the South-West Indian Ocean

10.1002/2017MS001177

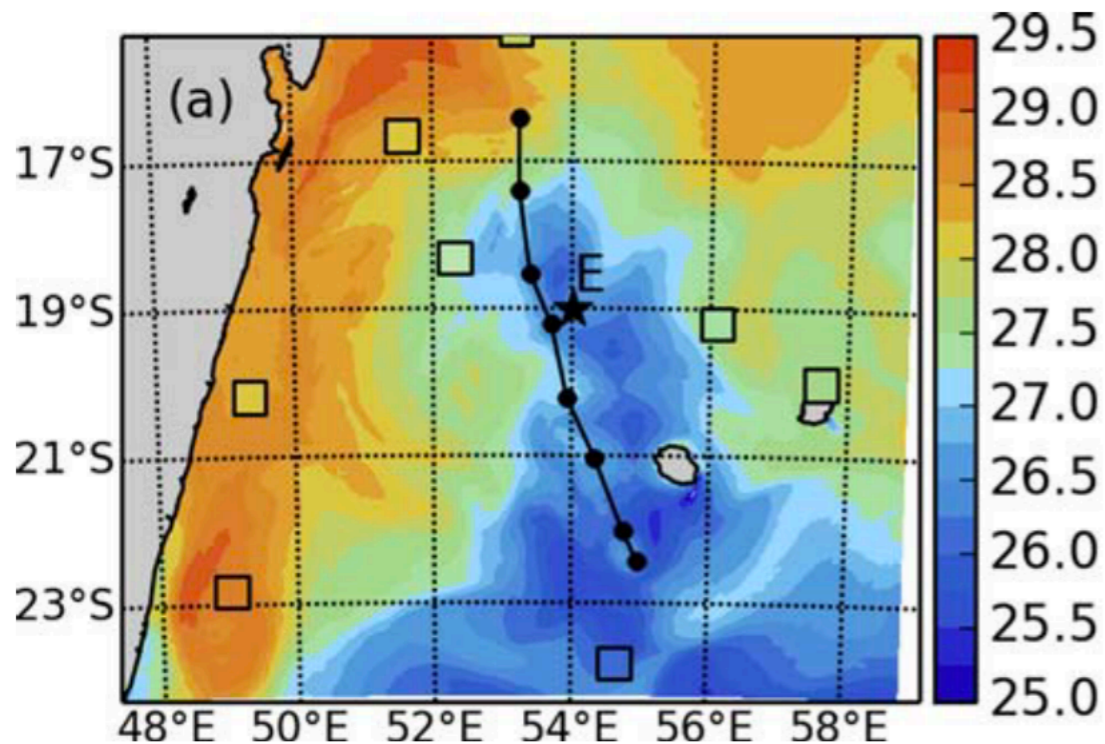
Key Points:

- A new coupled Ocean-Waves-Atmosphere system (MSWC) is presented in this paper
- MSWC successfully simulates air-sea processes under a tropical cyclone at kilometer resolution
- MSWC shows the importance of using a fully coupled system to have consistent sea salt aerosol fluxes and concentration

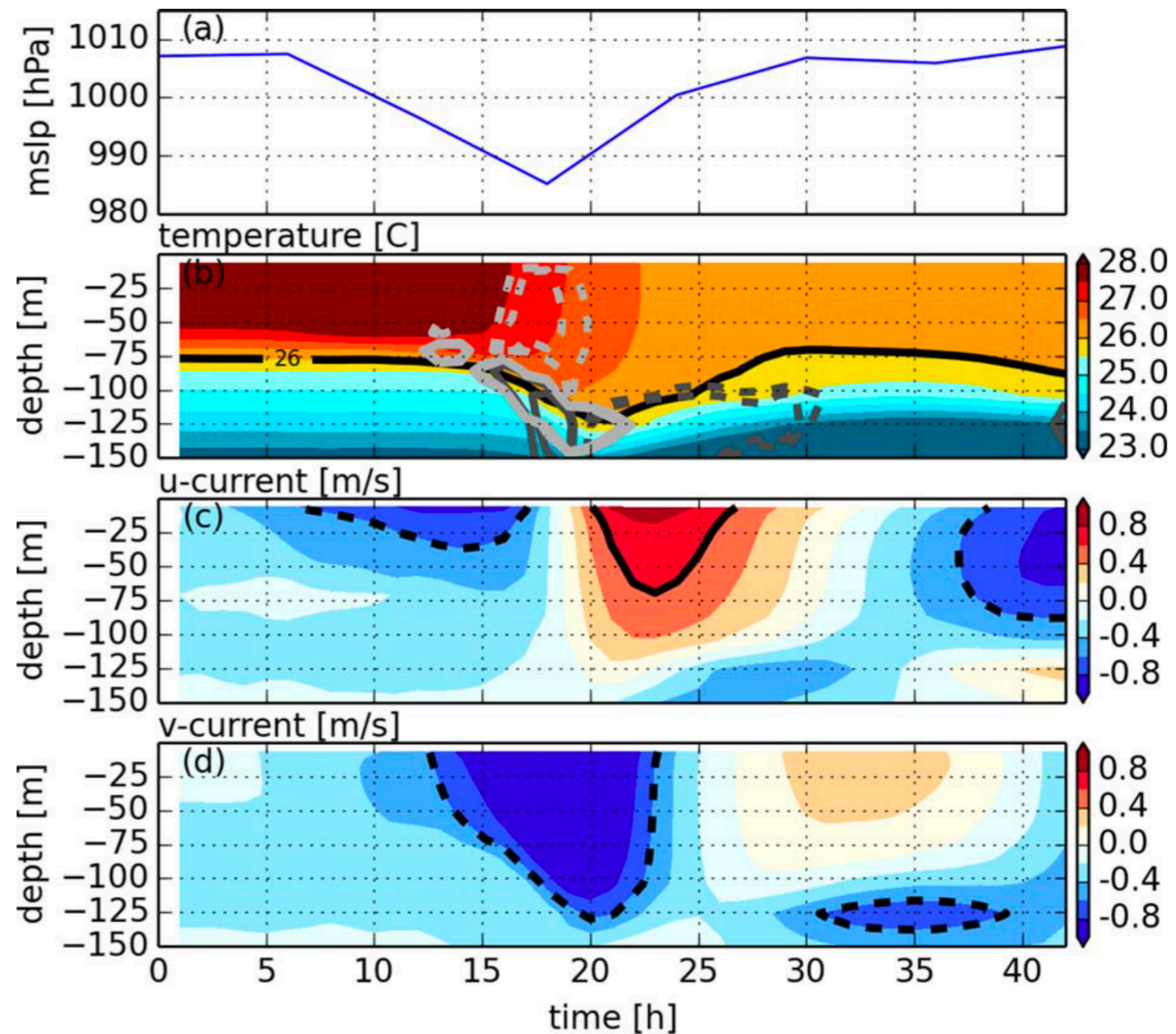
J. Pianezze¹, C. Barthe¹, S. Bielli¹, P. Tulet¹, S. Jullien², G. Cambon², O. Bousquet¹, M. Claeys¹, and E. Cordier³

¹Laboratoire de l'Atmosphère et des Cyclones (LACY), Université La Réunion, CNRS, Météo-France, Saint-Denis, France, ²Ifremer, Laboratoire d'Océanographie Physique et Spatiale (LOPS), Université Brest, CNRS, IRD, IUEM, Plouzané, France, ³Observatoire des Sciences de l'Univers de La Réunion (OSU-R), Université La Réunion, CNRS, Saint-Denis, France

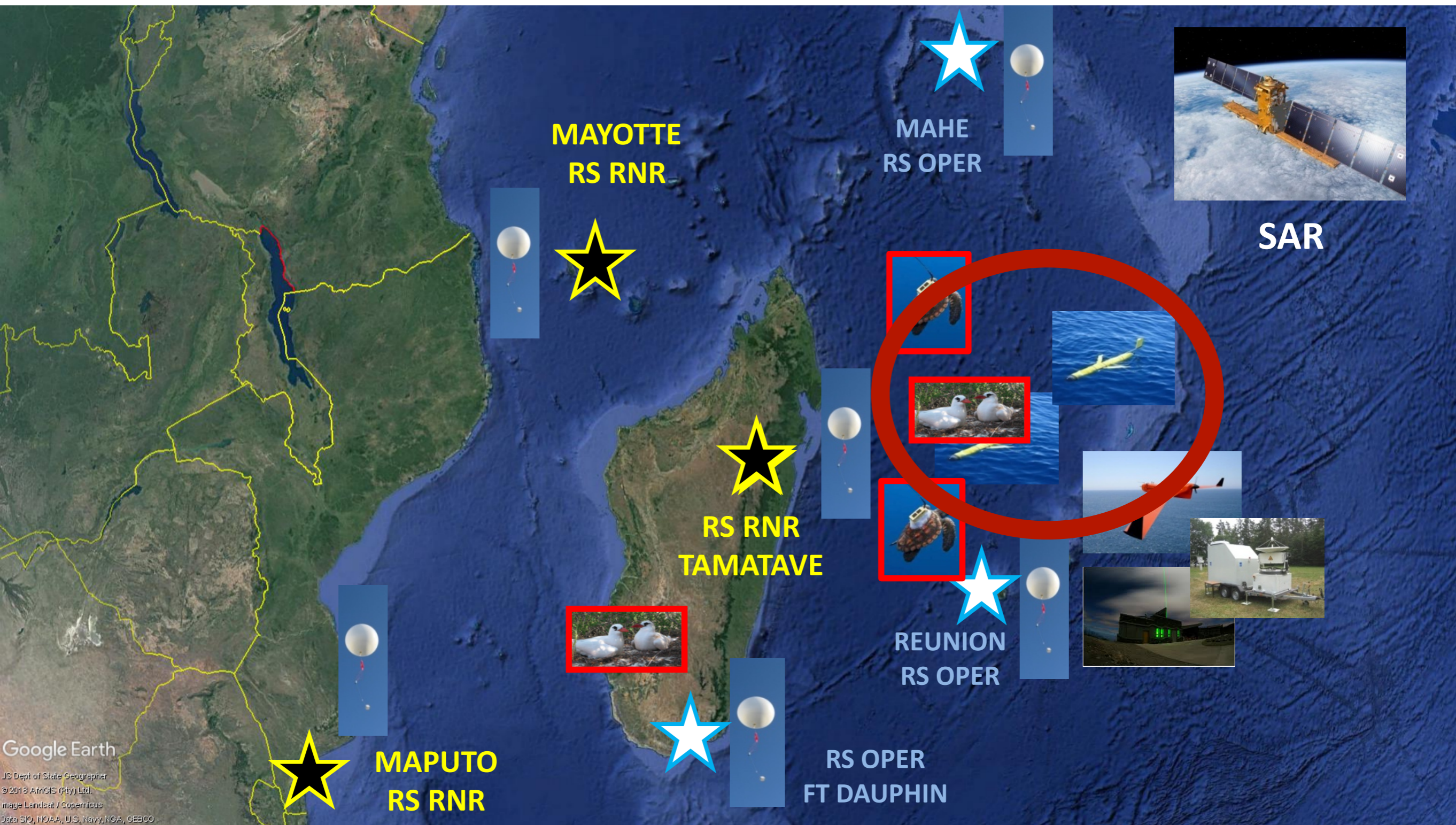
SST Surface Cooling



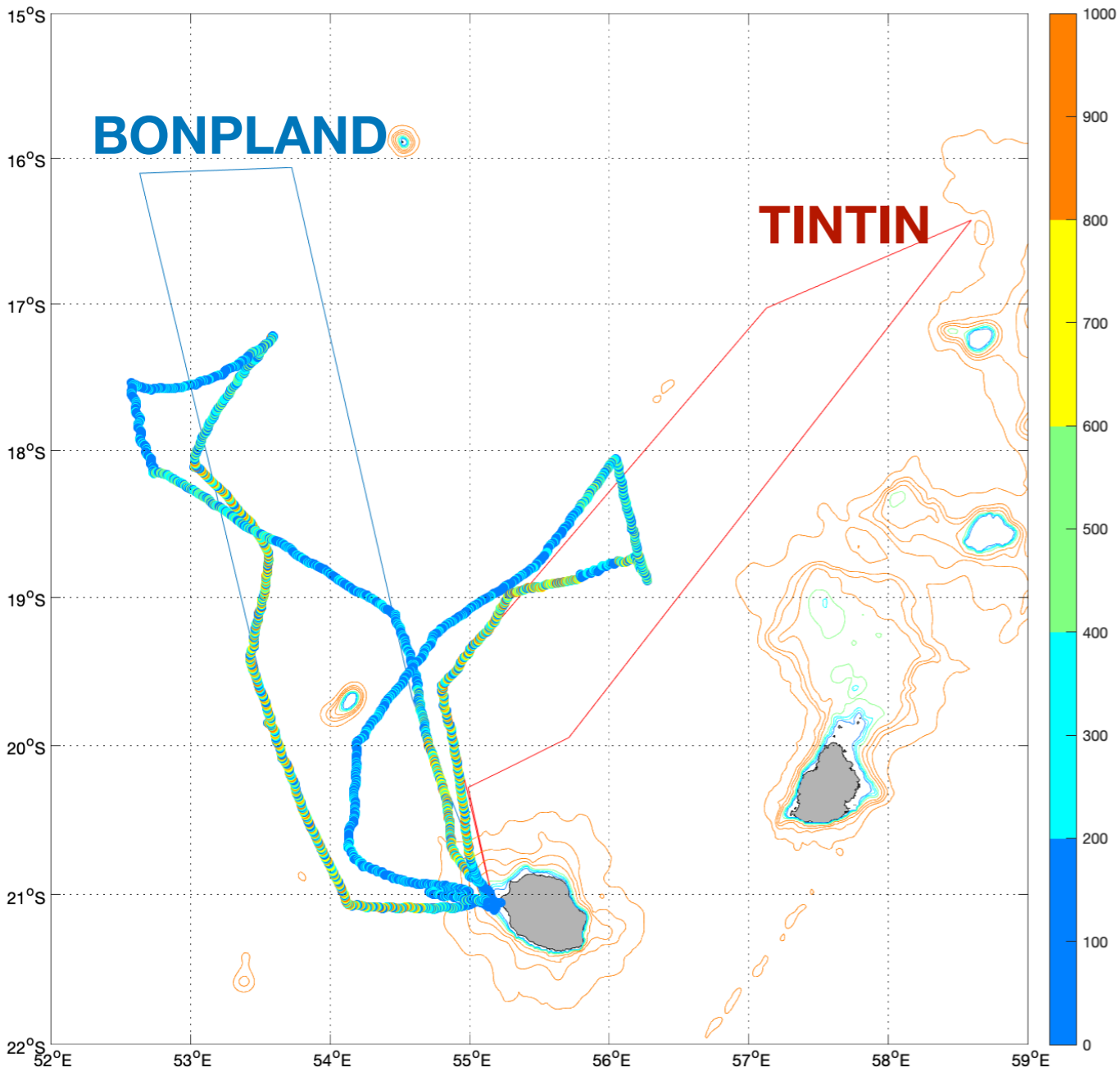
Thermocline Deepening



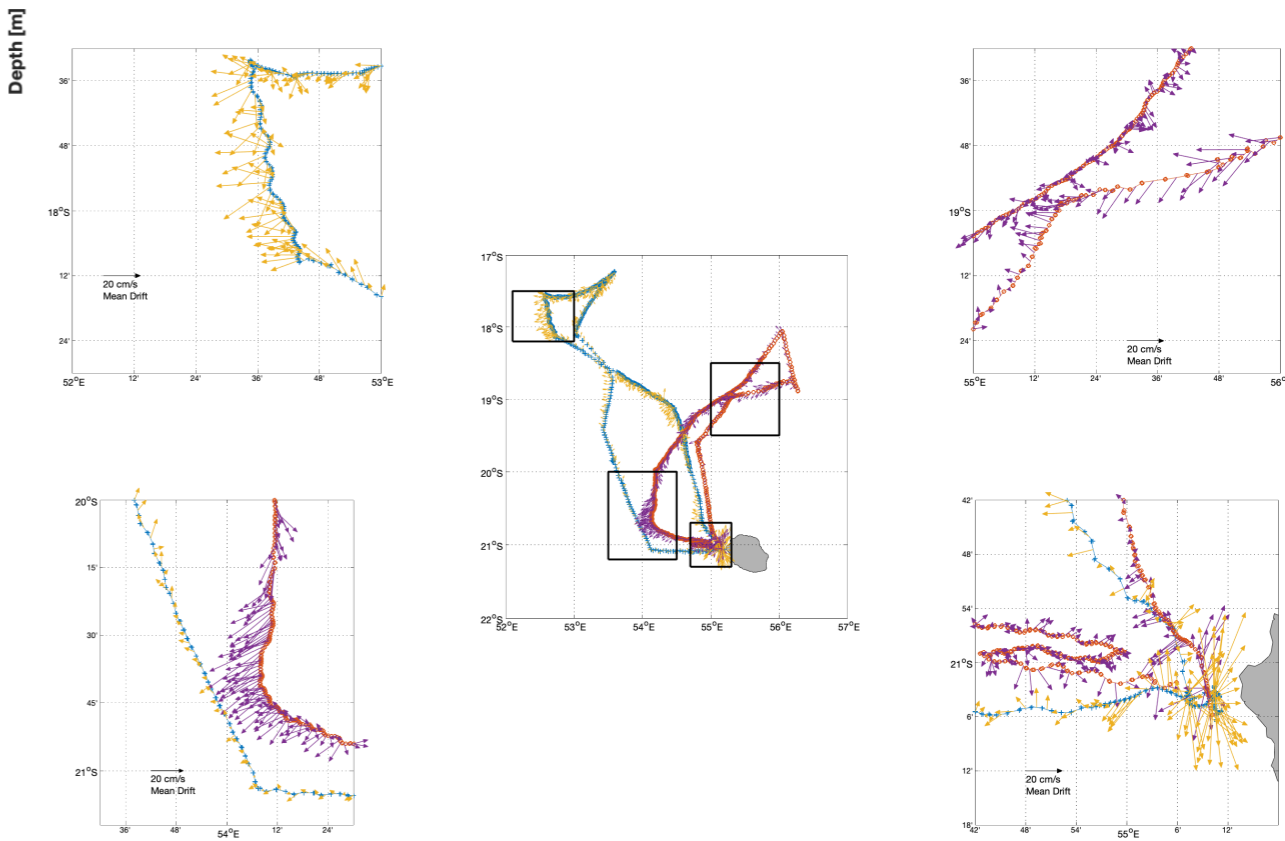
Field campaign Renovrisk : 20 Jan - 6 Apr 2019

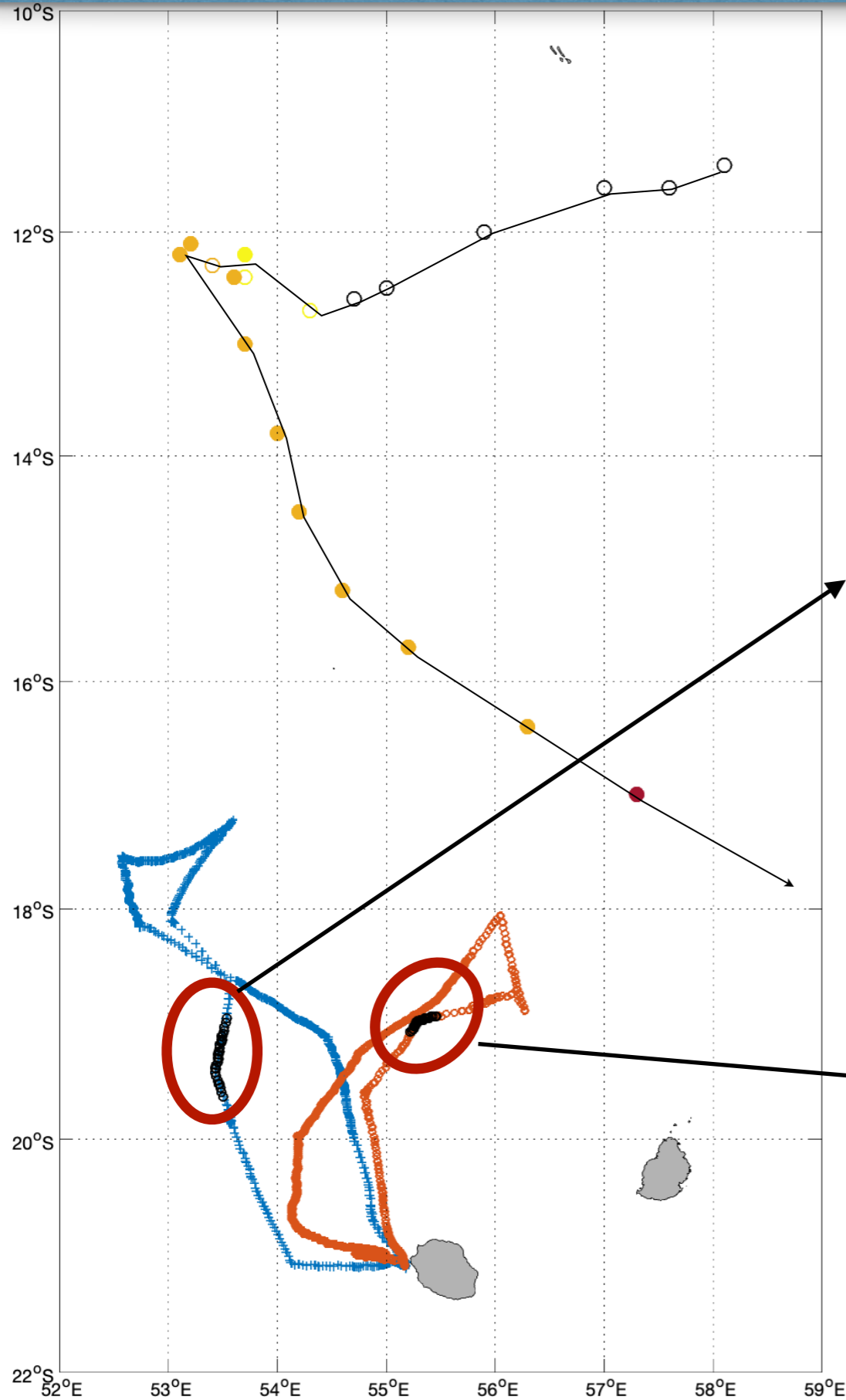


Tracks and depths along tracks

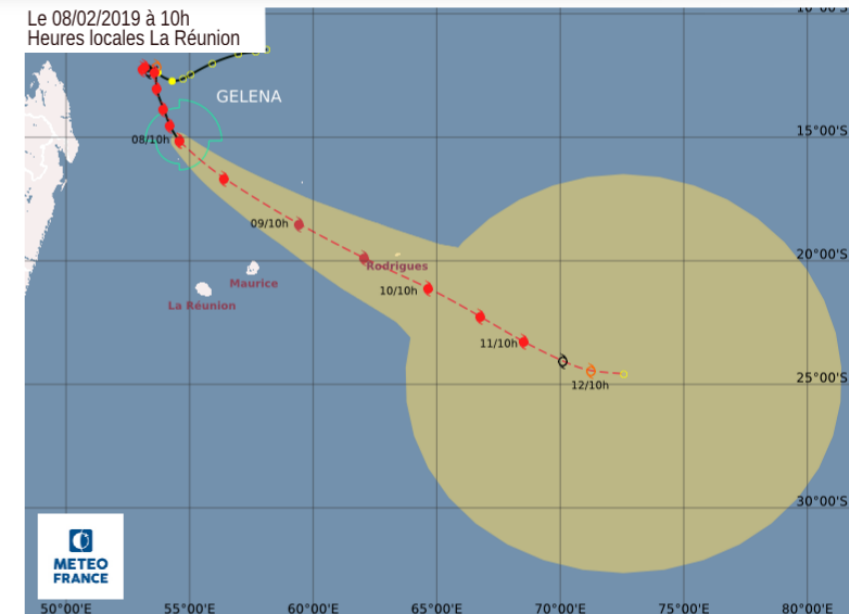
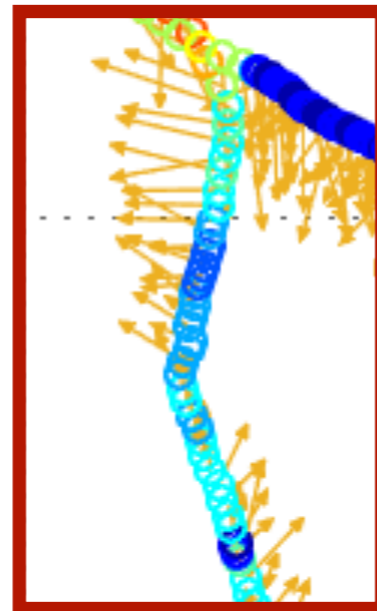


Strong Currents
> 50 cm/s
~1 m/s



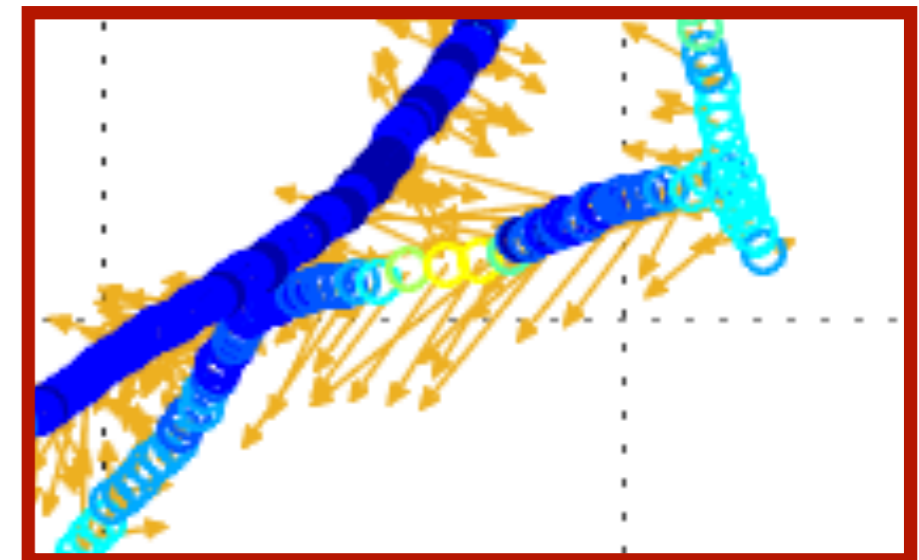


08-Feb-2019 Cyclone GELENA

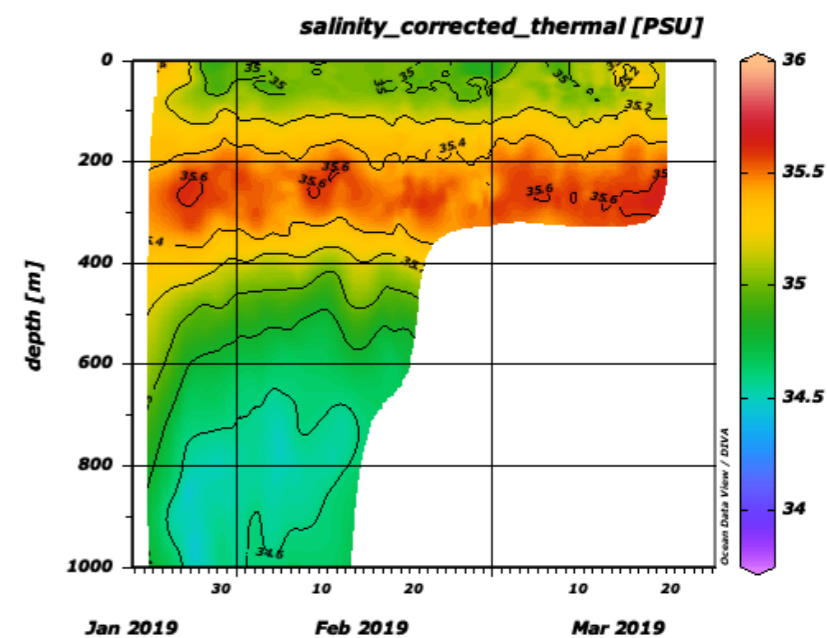
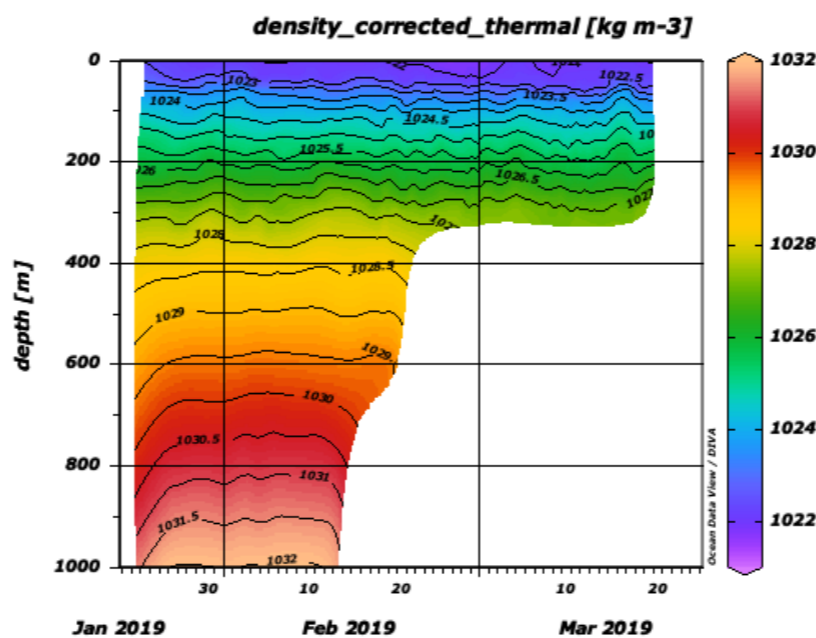
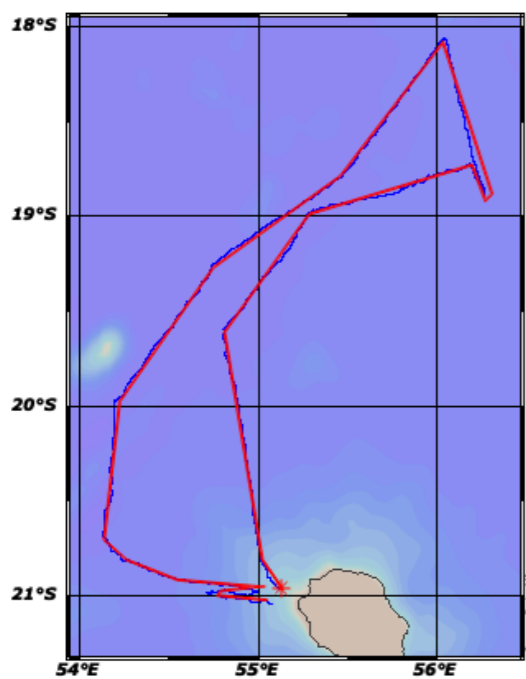
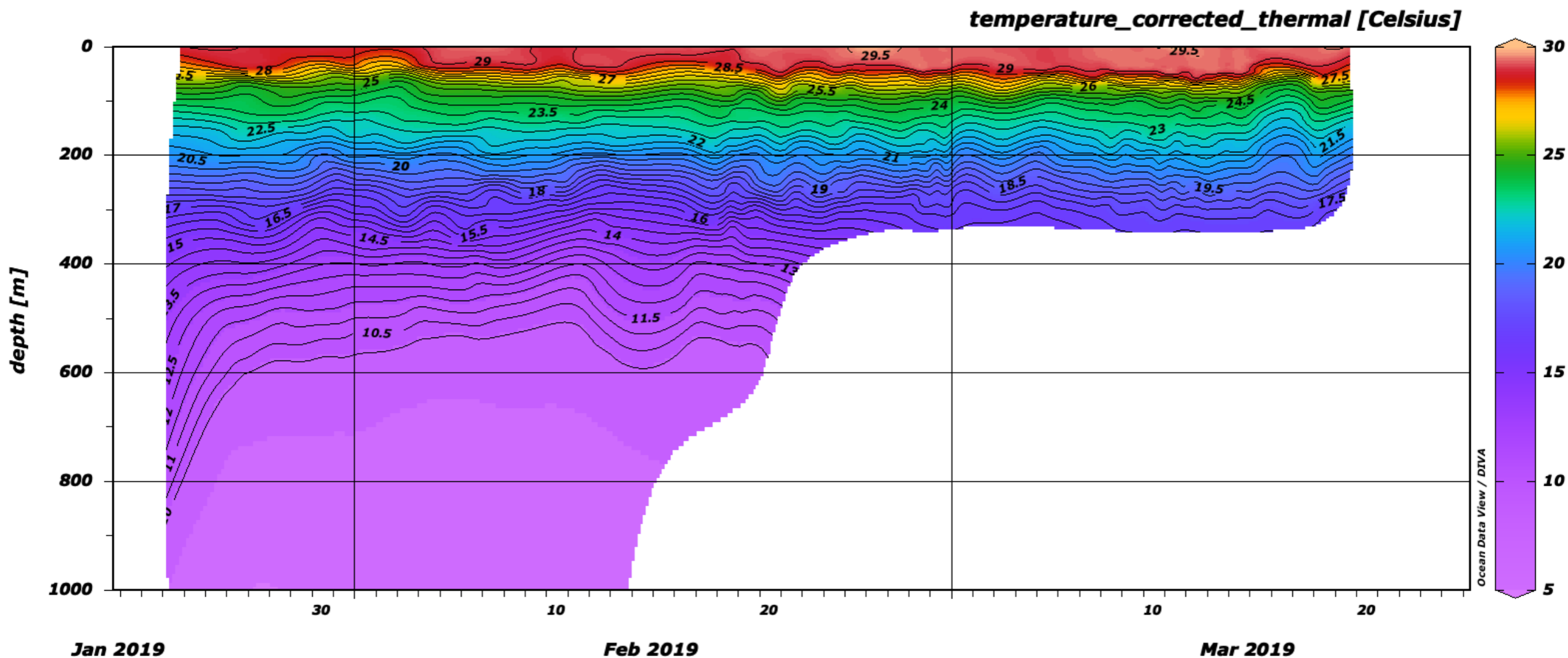


APPROCHE CYCLONIQUE

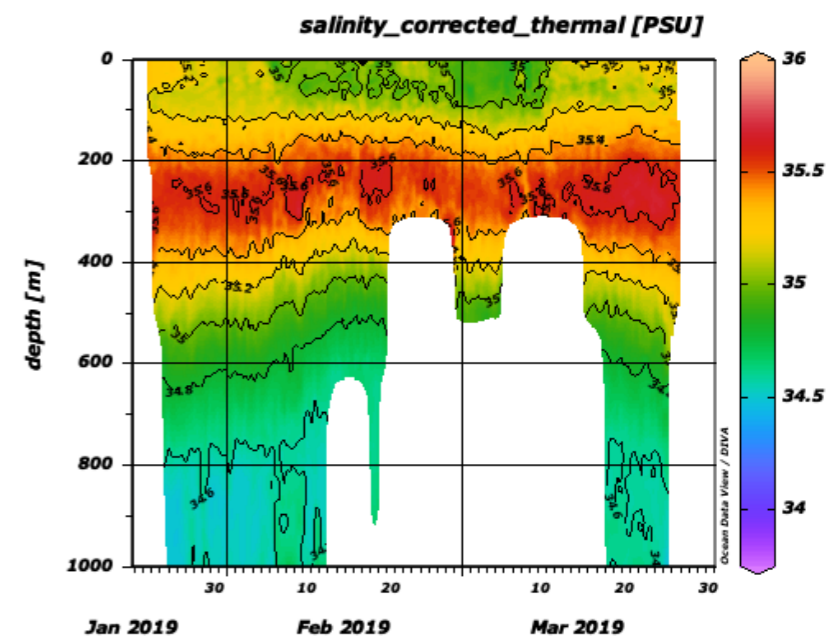
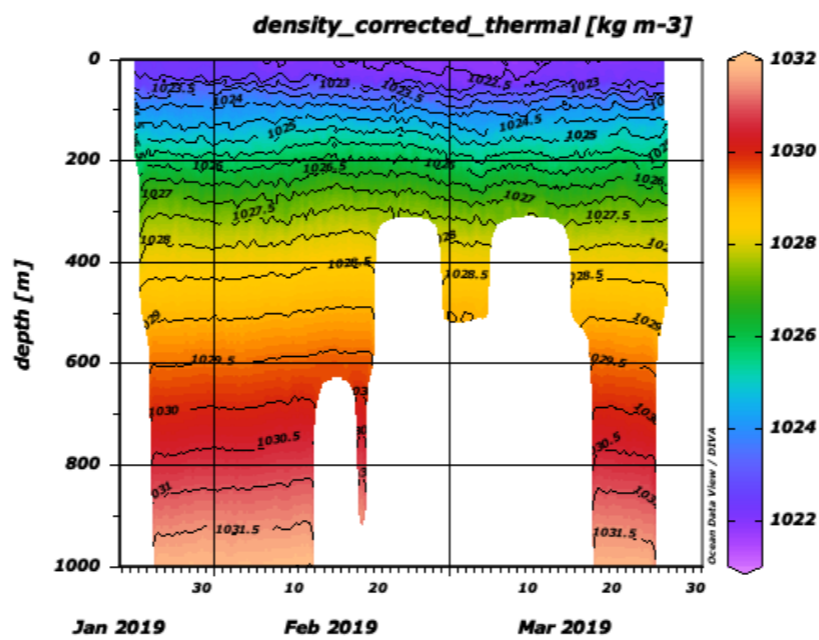
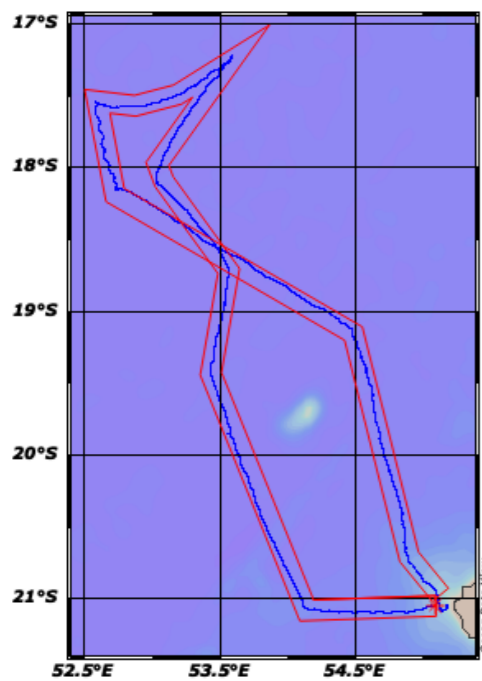
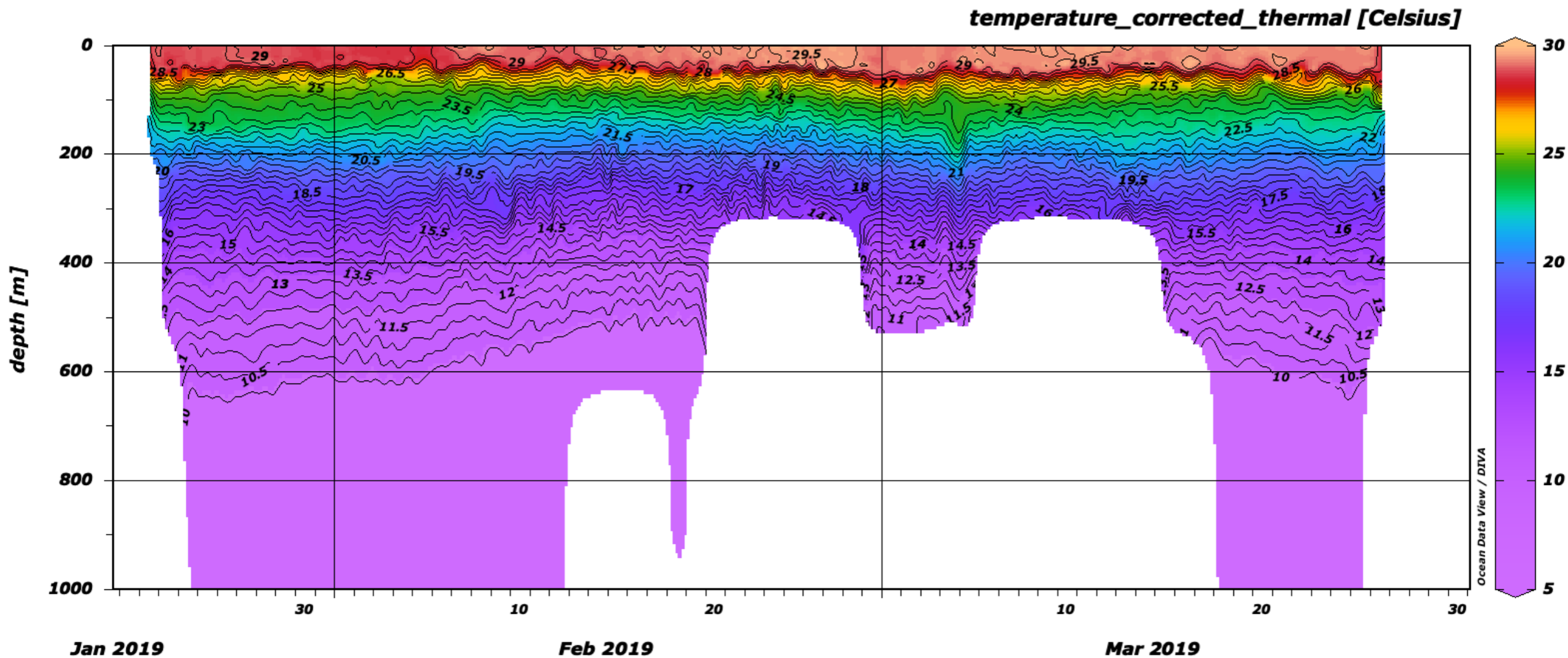
**DISTANCE
TINTIN / GELENA
290 km**



Renovrisk - Gliders Observations TINTIN



Renovrisk - Gliders Observations BONPLAND



THANK YOU TO THE GLIDERS TEAM

&

THANK YOU FOR YOUR ATTENTION