European Union's 7th Framework Programme
Grant Agreement Nº: 603521

Project Acronym: **PREFACE**

Project full title: **Enhancing prediction of tropical Atlantic climate and its impacts**

Instrument: Collaborative Project

Theme: ENV.2013.6.1-1 – *Climate-related ocean processes and combined impacts of multiple stressors on the marine environment*

Start date of project: 1 November 2013 Duration: 48 Months

Milestone Reference Number and Title:

MS 19

" Forced models test experiments "

Lead work package and beneficiary for this milestone: WP5, IRD

Due date of milestone: 31.10.2015

Actual submission date: 2.11.2015

Comment:

This milestone consisted in conducting the necessary process study experiments to interpret WP3/4 observational and model analyses and evaluate the relative role of different tested processes. It contributes to WP5 specific objective 2: *Carry out model process studies aimed at isolating the effect of specific internal or external forcing, to quantify the role of specific processes on observed variability*, filled through task 5.2, whose results are reported in D5.1.

Test experiments (listed in the table below) are based on reference experiments described in MS18, where a specific process is removed or added. The comparison between test and reference experiments allows quantifying the effect of the tested process on the simulated ocean mean state and/or variability.

Reference experiment	Test experiment	Objective	Responsible
NEMO ATL025-75	interannual wind and climatological precipitation forcing	Isolate relative role of wind and precipitation on SSS interannual variability	IRD
	climatological wind and interannual precipitation forcing		
	without river runoff	Identify role of runoff on vertical stratification of the upper ocean	
	with observed mean chlorophyll concentration	Quantify the effect of changes in solar flux penetration due to chlorophyll on SST	
	with observed seasonally-varying chlorophyll concentration		
	with observed interannually-varying chlorophyll concentration		
	annual wind stress	Evaluate the dynamical and thermodynamical effects of intraseasonal winds on interannual variability of the Atlantic cold tongue	
	annual + <30-day variability in wind stress		
	annual + >30-day variability in wind stress		
	annual + <30-day variability in wind stress and wind speed (that affect latent heat flux)		
	annual + >30-day variability in wind stress and wind speed (that affect latent heat flux)		
ROMS NGOG15	with smoothed coastline	Quantify the respective contribution of cape effect and nonliear terms on coastal upwelling	UAC/UCT/CRO/IRD
	without nonlinear terms		
L-NEMO ATL025-46	climatological forcing	Identify the characteristics and effects of equatorial and coastal Kelvin waves generated by equatorial westerly wind bursts	UPMC/UCAD
	climatological forcing + idealised wind burst		
MOM-5.1 EABCM-P	ERA-interim winds	Identify the influence of different wind and radiation pattern on the poleward transport in the Northern Benguela upwelling area	IOW
	NCEP winds		
	CCMP winds		
	Bodin radiation scheme		

The South-Atlantic MOM regional interanual simulation is directly available from thredds-iow.io-warnemuende.de.
For other data, please contant Alban Lazar <alban.lazar@locean-ipsl.upmc.fr> and Gael Alory <gael.alory@legos.obs-mip.fr>