Linking Earth Observation data and Sustainable Development across the Atlantic

Discover new uses of Earth Observation data

Incorporated on the
3rd Marine Technologies Workshop

ATLANTIC SST PREDICTION BY USING ANN

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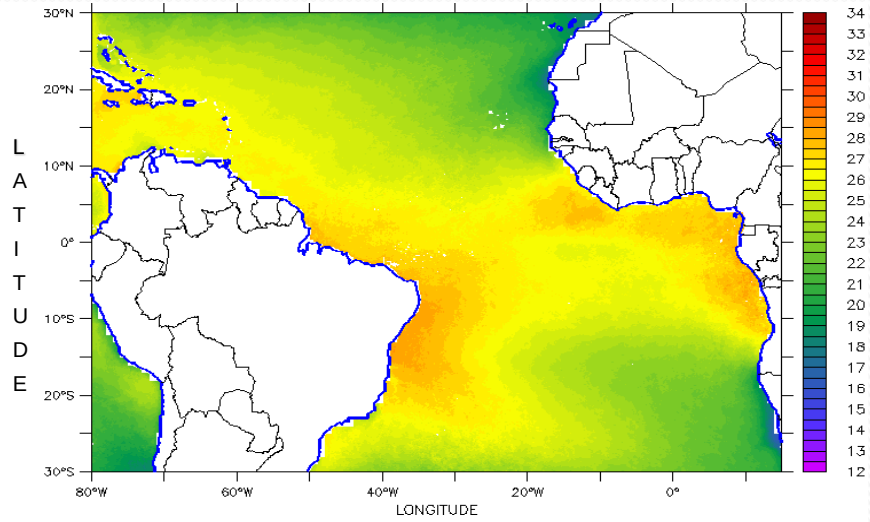
03 - 05 December 2019
Estoril, Portugal

MOTIVATION

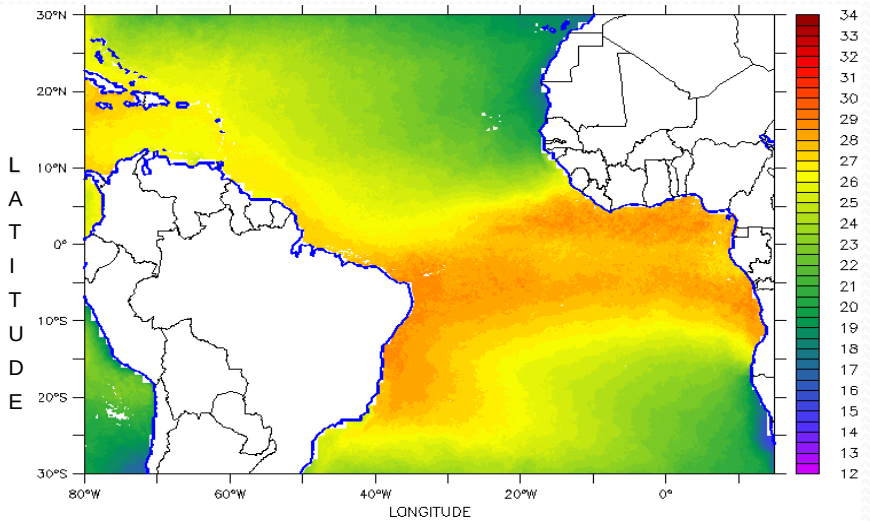
Climate Prediction and monitoring are essential for political and technical decision making, at Northeastern Brazilian Region (NEB), because this region suffer extreme weather and climate events like drought and floods, and the Pacific and Atlantic Ocean play a crucial role in defining the NEB rainy season (February to May) quality.

SST Seasonal Patterns in the Atlantic

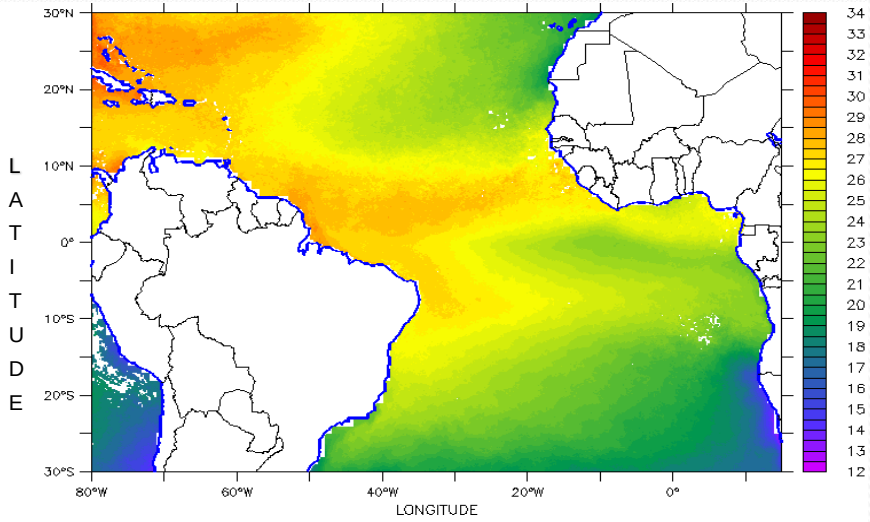
NOAA/AVRR DATA



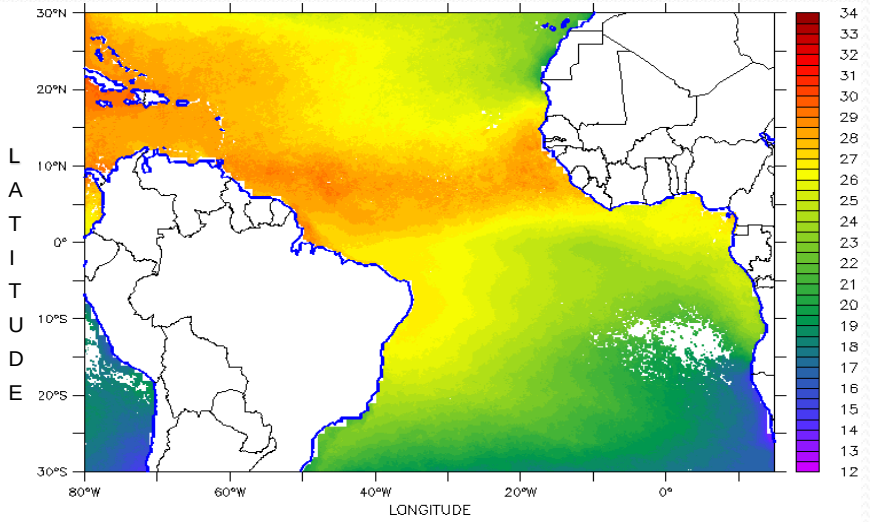
TSM NOAA/AVHRR – MEDIA SAZONAL – DJF



TSM NOAA/AVHRR – MEDIA SAZONAL – MAM

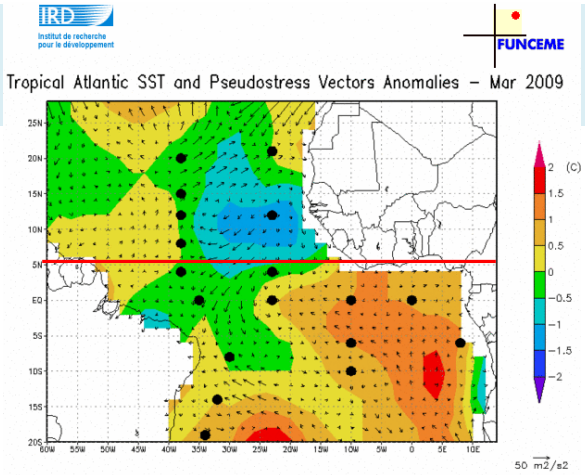


TSM NOAA/AVHRR – MEDIA SAZONAL – JJA

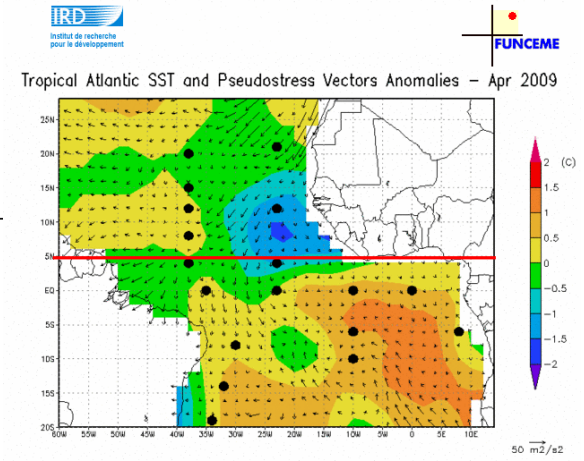


TSM NOAA/AVHRR – MEDIA SAZONAL – SON

CEARÁ STATE – BRAZIL RAINY SEASON



March 2009



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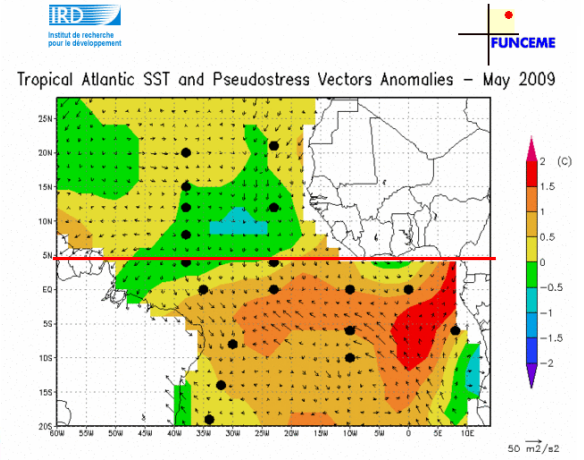


May 2009

Banabuiú Reservoir – Situation in May 05, 2015

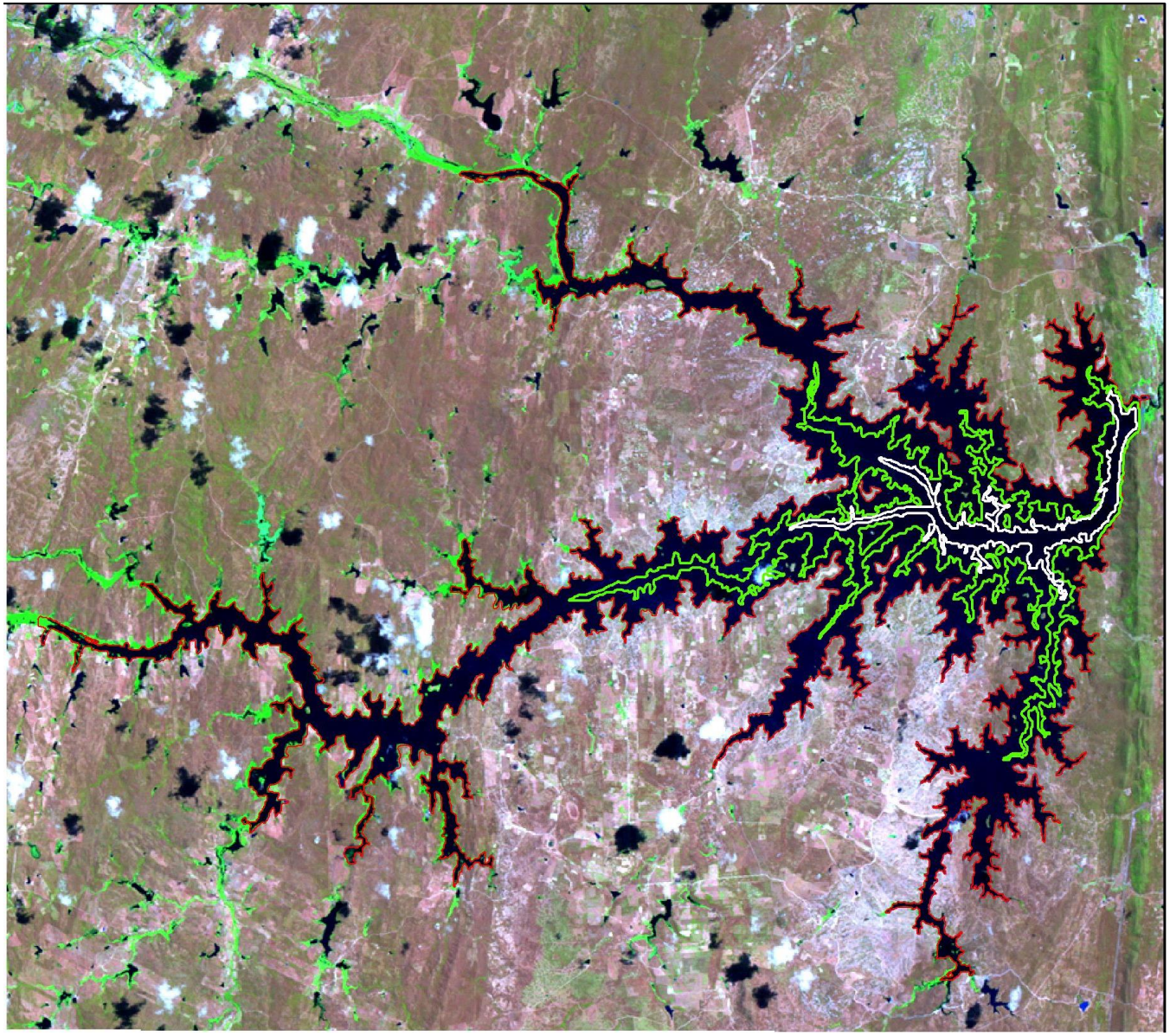
2014

Rainy Season 2015 (February to April) – 23,1% below the Normal

FUNCEME

LabOMar

Banabuiú Reservoir - Ceará State



Comparison between the Banabuiú reservoir water mirror situation

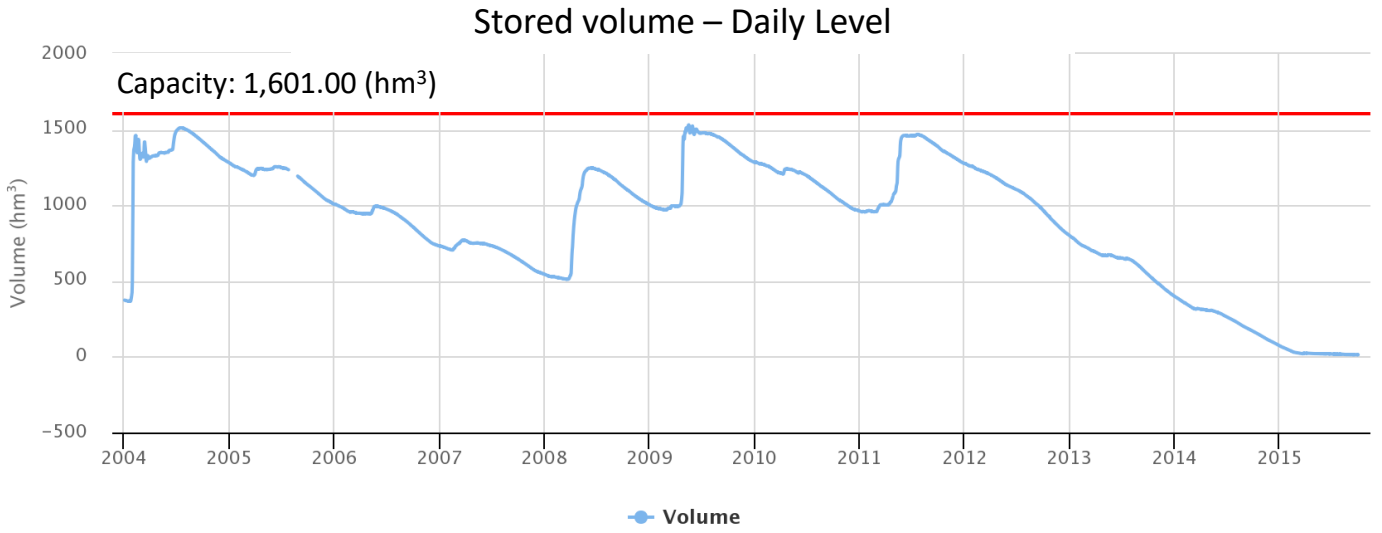
August, 2011 (-)

July, 2014 (-)

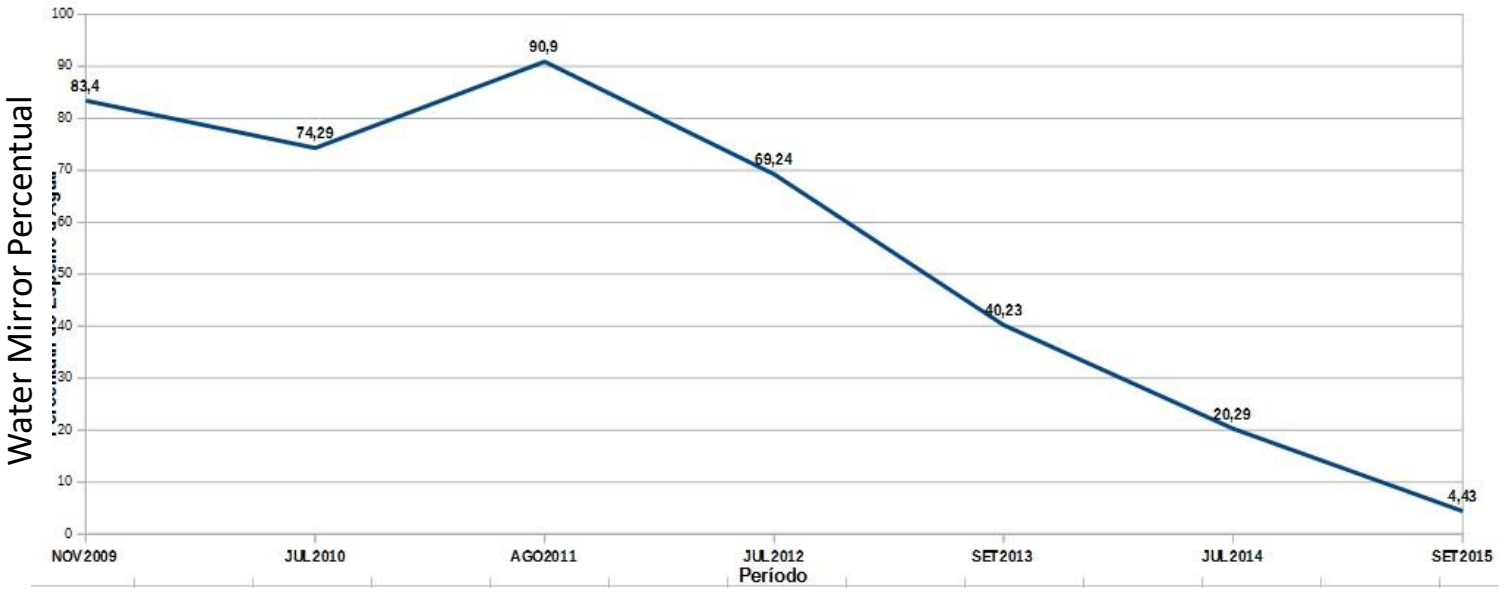
September, 2015 ( )

Banabuiú Reservoir

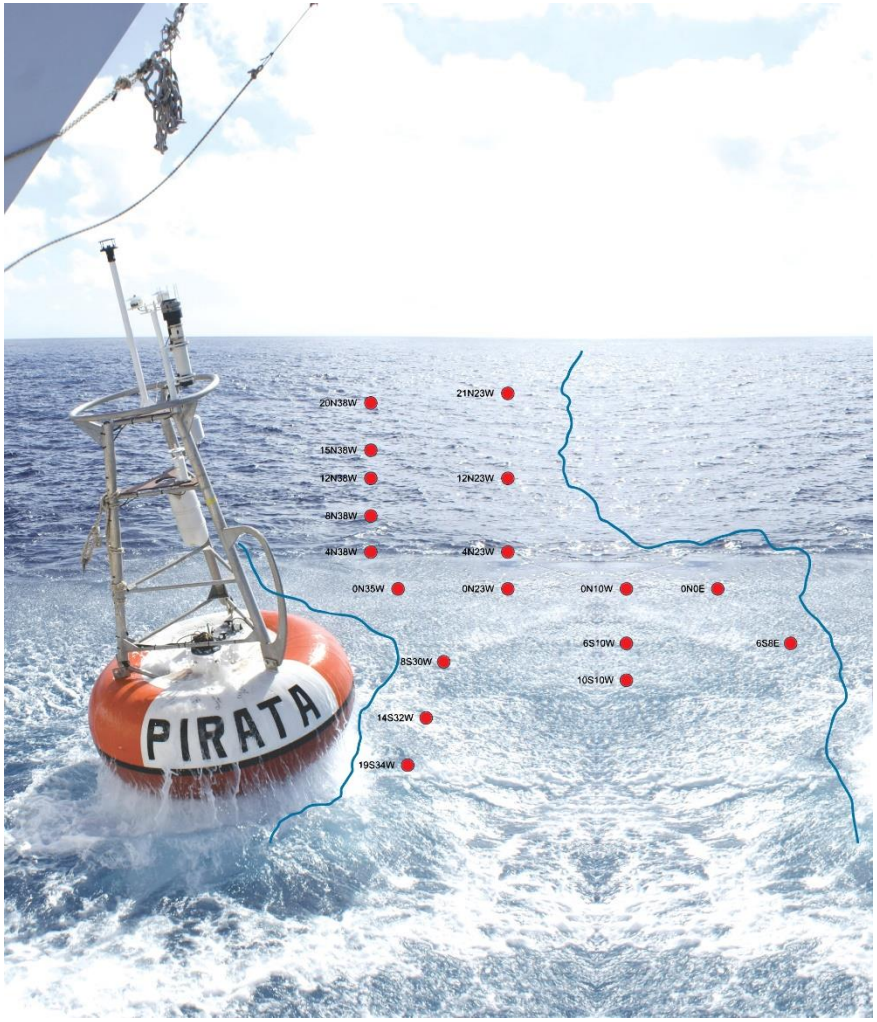
Water Volume Evolution (%)

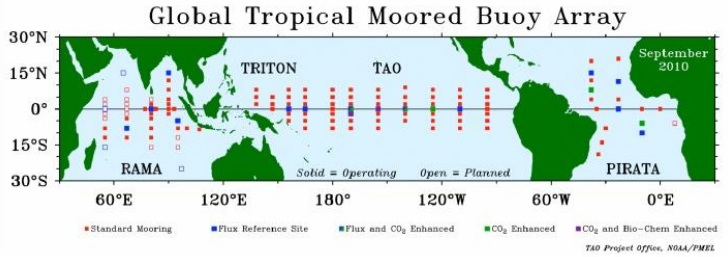


Water Miror Evolution (%)

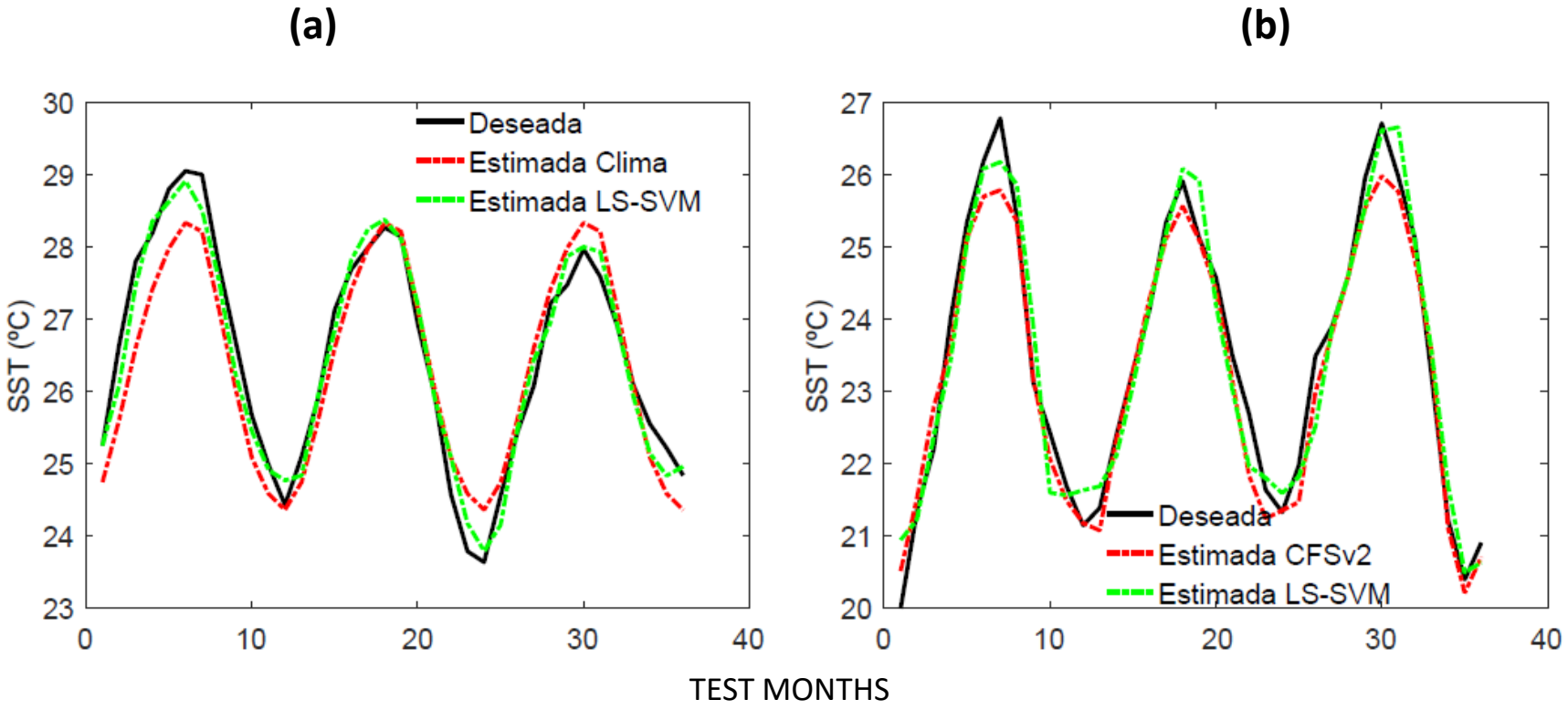


PIRATA – Prediction and Research Moored Array in the Tropical Atlantic





SST MONTHLY PREDICTION USING ANN



(a) Buoy 19S 34W. MAE (ºC): Climatology = 0.46; LS-SVM = 0.24. Date: 10/2015 to 09/2018

(b) Buoy 21 N 23W. MAE (ºC): CFSv2 = 0.29; LS-SVM = 0.36. Date: 04/2015 to 03/2018

SST ATLANTIC DIPOLO PREDICTION TOOL BASED ON AI

Thank you for your attention

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