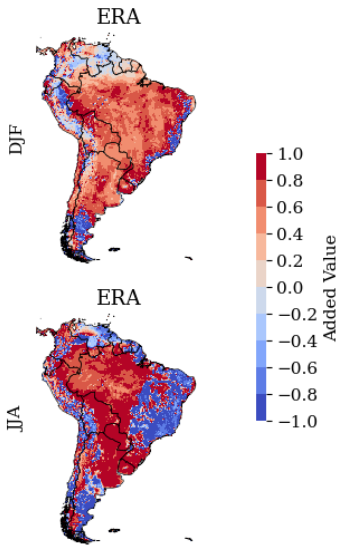
Project: 1207
Project title: Decadal Variability of the Tropical Pacific - El Niño Events
Principal researcher: Dmitry Sein
Report period: 2023-01-01 to 2023-10-30.

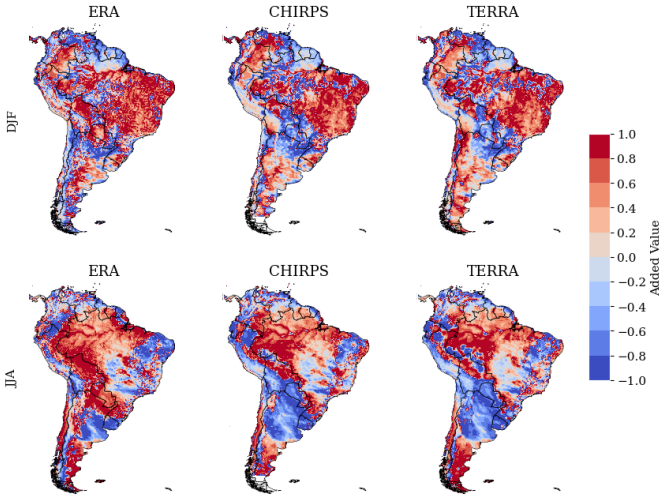
Over the course of the year, the following activities were carried out in the frame of this project:

1) The first activity involved making corrections to the coupled modelling article that is being prepared for South America (link to the document is given in Annex I). Some graphics have been corrected for better presentation in the document. Have been made corrections to the content of the text according to suggestions received. The added value and Perkins score of some variables have been calculated to better explain the advantages in coupled modelling compared to the uncoupled experiment.



Added value of seasonal temperature for South America in ROM compared to REMO. Reference data set is ERA5.

The added value (AV) was determined according to (Weber et al., 2023), positive values indicate the ROM temperature is closer to observation than REMO. For the summer temperature (DJF) positive AV values can be found in areas such as west and central Brazil, north and east Bolivia, central and north Argentina, Paraguay, Peruvian coast and north Chile. During the winter season (JJA), positive values of AV are maintained, except east Brazil and on the coast of Peru.



Precipitation Added value over SA of ROM compared to REMO. Reference data sets are ERA5, CHIRPS and TERRA. Positive (negative) values indicate a lower (higher) precipitation bias of ROM compared to REMO

The Added Value is represented above. In DJF the coupling improves the precipitation mainly in zones as east of Brazil and Colombia and central Argentina. In austral winter (JJA), ROM has a better performance, east of the Andes mountains range, west Brazil, north Bolivia and south Argentina.

2) The second activity consisted of having training in Lima about the use of the Levante server, coupled ocean-atmosphere modelling, access to data from CMIP6 models, considerations for carrying out executions of climate change scenarios as well as the use of the StrongLink (slk) command line interface, for uploading and downloading data from storage. This training was provided by Dr William Cabos in Lima.

3) The third activity that is being carried out is the preparation of initial conditions from CMIP6 models data. These data will be used in climate change scenario experiments. Data from the NorESM2-MM, MPI-ESM1-2-HR models, etc. are being prepared; to be run using the WRF regional model.

ANEXO I

https://docs.google.com/document/d/1mxgqW3CX5x1E674UHZSQl4hmfJthzr34/edit