Online meeting 16 Jan 2023 14:00 UTC
Participants: Ariane, Nils, Caio, Barbara, Ramon, Estibaliz, Ivan, Linus, Thomas, Cynthia, Hellen, Marcos, Natalia, Santiago, Soledad, and others

Goal: discuss regional model scores comparison to global, use and evaluation of event-based scores, contribution to EW4All and model error assessment, starting with a South America pilot project. A first gathering to understand what participating groups can contribute and discuss next steps.

Ramon presented an overview on the activities of NWS in Argentina

ECMWF verifies severe weather conditions and winds, temperature and precipitation using EU data and USA data, ERA5; they are interested in accessing data of severe weather events over South America. ECMWF has an annual verification report.They don't have severe weather verification forecasts. They are going to propose scores for severe weather but the process will take 2 years to be approved in operations
- Sharing datasets would be helpful
- Sharing methodologies is also welcomed to improve NWS capabilities
- Sharing capability to meet the goals of EW4All initiative should motivate the work of the pilot project work
- Intercomparison of models (global and regional models)

WMO verification standards are under review and Thomas Haiden is leading the initiative
ECMWF-DEarth is developing verification activities to verify DEarth products over steep terrain areas

Action points:

- Register project as joint working group project on WGNE website (Ariane)
- Detail more clarity on data access and data exchange (Nils, all)
- Skill comparisons (Global/Regional, comparison to observations, e.g. skill diagram) (All)
- Clarification of WMO region South America (north and south), (Thomas Haiden)
- EFI needs, explain methodology (Ivan Tsonevsky)
- Prepare presentation and gap analysis for Extreme event cases on examples in Argentina (Estibaliz Gascon)
- Prepare presentations on comparison global/regional (All)
- Report to WWRP on progress and support (Hellen Msemo)
- Exchange platform (confluence or else, tbd please make suggestions, if you all register at ECMWF, I can give personalised access to a confluence page hosted at ECMWF.)
- Next meeting in 1 month, please fill https://doodle.com/meeting/participate/id/dB1nLONb

Data sharing (please add as you see fit or add requirements):

ECMWF

ECMWF has available open data at https://www.ecmwf.int/en/forecasts/datasets/open-data

There are also now third party providers, e.g.

```
curl
"https://api.open-meteo.com/v1/forecast?latitude=34.6&longitude=58.38&current_weather=true&hourly=temperature_2m,relativehumidity_2m,windspeed_10m,winddirection"
1>buenos.jason

And plot with:

import matplotlib.pyplot as plt
import matplotlib.ticker as ticker
import numpy as np
import json
dictionary = json.load(open('buenos.jason', 'r'))
#for key in dictionary.keys():
#    print(key)
#for value in dictionary.values():
#    print(value)
#    break
dict = dictionary["hourly"]
xAxis = dict["time"]
yAxis = dict["temperature_2m"]
## LINE GRAPH ##
fig, ax = plt.subplots(1,1)
plt.grid(True)
plt.xlabel('Date')
plt.ylabel('2m-Temperature [degrees C]')
ax.plot(xAxis,yAxis, color='red', marker='o')
ax.set_xticks(ax.get_xticks()[::72])
#plt.xticks(np.arange(min(xAxis), max(xAxis)+1, 24.0))
#plt.show()
plt.savefig('T2m.png')
```

We also have access via mars (also reanalysis data should be accessible in this way) where you need to web-register at the ECMWF

https://www.ecmwf.int/en/computing/software/ecmwf-web-api#:~:text=The%20ECMWF%20Web%20API%20enables,on%20the%20API%20service%20used

And you may use https://github.com/ecmwf/earthkit

We can further discuss bespoke simulations that can be published and then accessed via the same mechanism. See for example https://apps.ecmwf.int/ifs-experiments/, e.g. a simulation at 2.8km global resolution can be accessed with experiment class=rd, expver=**i5aw.**

Further, on the dates of interest 16/17 December 2023, a 4.4km test data set exists (you need a public access ECMWF web account):

the parameter list of avail parameters is here:

https://confluence.ecmwf.int/display/DDCZ/DestinE+ExtremesDT+Parameters

and the procedure to retrieve the data is here

https://github.com/destination-earth-digital-twins/polytope-examples

SMN (Argentina)

The simplest approach to obtain time series from weather stations from the SMN is to go through the API of the Regional Climate Center Network for Southern South America (CRC-SAS). Note that this dataset includes in addition data from neighboring countries.

Information regarding data and protocols can be found in a GitHub repository (in spanish only).

For reasons of data security, access to the API goes through a HTTP basic authentication. Those interested in obtaining access should write to:
proyecto.sissa@gmail.com
        with copy to
Maria de los Milagros Skansi mms@smn.gob.ar
        and
Ramon de Elia rdelia@smn.gob.ar

The email should contain a paragraph describing the collaboration in this project. For example,

"Dear Sir/Madam

As a participant in a WGNE-JWGFVR pilot project that aims to verify ECMWF forecasts over Argentina, we would like to have access through the API to daily time series (registros de observaciones in situ de distintas variables meteorológicas a nivel diario).

Thanks in advance
XXXX
ECMWF"

Pilot project name contest:

Proposed by SMN
VERA: **V**erification of **E**CMWF fo**r**ecasts over **A**rgentina
          Or
          Verification of **E**CMWF forecasts and **R**eanalyses over **A**rgentina
There is already a project with similar name https://earth.esa.int/eogateway/activities/vera

 VERSA: **V**erification of **E**CMWF fo**r**ecast**s** over **A**rgentina
    Eventually this can also be applied to **V**erification of **E**CMWF fo**r**ecasts over **S**outh **A**merica