

Online meeting 26 April 2023 14:00 UTC

Participants: Ariane, Nils, Caio, Barbara, Ramon, Estibaliz, Ivan, Linus, Thomas, Cynthia, Hellen, Marcos, Natalia, Santiago, Soledad, Lucía, Federico and others

Week-2 Outlook products - In evaluation for the risk management Sector

- Forecast methodology and case study
- What products are used
- How implemented ECMWF in their workflow
 - Analyze all graph products -> Select a forecast area -> Dichotomous verification
 - Case study – Heat Waves
 - Use of internal and external products
 - S2s argentina forecasts use different models - select consensus of areas - anomalies > 2°C
 - Extended is less skillful to argentina
 - Extension of heatwave should be explored
 - Extended ECMWF forecasts less skillful than the other sources (ENS ECMWF, NOAA)

Zonda wind severe event - Zonda wind is a typical downslope windstorm (foehn type) over the eastern slopes of the Central Andes in Argentina. Most studies on this phenomena are concentrated in the provinces of Mendoza and San Juan.

- Soundings correlate very well among WRF and ERA5 to windward, but not for leeward
- Warmer bias at low altitude stations and colder bias at high altitudes stations
- Td has good correlation for lower altitudes in the Chilean side; high altitude stations with dry bias for ERA5 and wet for WRF model. Dry bias where the Zonda blows with better agreement for ERA5 land model
- Wind speed - Good correlation for lower altitudes in Chilean side; larger differences in between ERA5 land, with lower wind speed and ERA5 single levels, with higher wind speed at high altitudes; WRF present higher winds speed and no so good representation of wind speed in general (BIAS and RMSE)
- ECMWF high res validation - Good agreement leeward before the event; not so good during and after the event
- ERA reanalysis present negative bias in Zonda stations
- Ensemble 20 members, 4 km resolution
- Wind gust are underestimated
- Wind gust parametrization at ECMWF dont account to the dynamic behavior

Red events - climatology is the basis based on station climatology 1990 - 2010

Presentation Fabio: gave an overview on the approaches that could be adopted to have different domains to assess NWP quality over south America

Destructive convective systems over argentina - different alerts

Thomas mentioned there is a drop in skill from week 2 to 3, it'd be useful to verify the extended range forecasts over South America

Estibalis asked the soundings from Argentina - available on the Wyoming webpage

Predict dewpoint and extremes are important for EW4All

Next meeting - Ariane to present what is under development at CPTEC regarding the wind gust that could help other models

Nils Notes

- database of Extreme events - target specific events (April Rainfall, Brazil ; 16/12/2023 destructive convective event ; Zonda leewave; ...)
- initial focus on extra tropics - Model intercomparison project over 3 regions of South America (Fabio)
- Domains discussion, IPCC domain, WMO domains
- EFI wind gusts not strong enough (info on new wind gust parameterization ?), EFI on high dew points ?
- Beyond 2 weeks verification over South America regions ?
- Dust verification information (Zonda and beyond)
- EW4All heatwaves, flooding, dewpoint extremes