National domain verification at NMA

Mihaela BOGDAN, Stefan Ioan GABRIAN, Stefan DINICILA

Mihaela.bogdan@meteoromania.ro
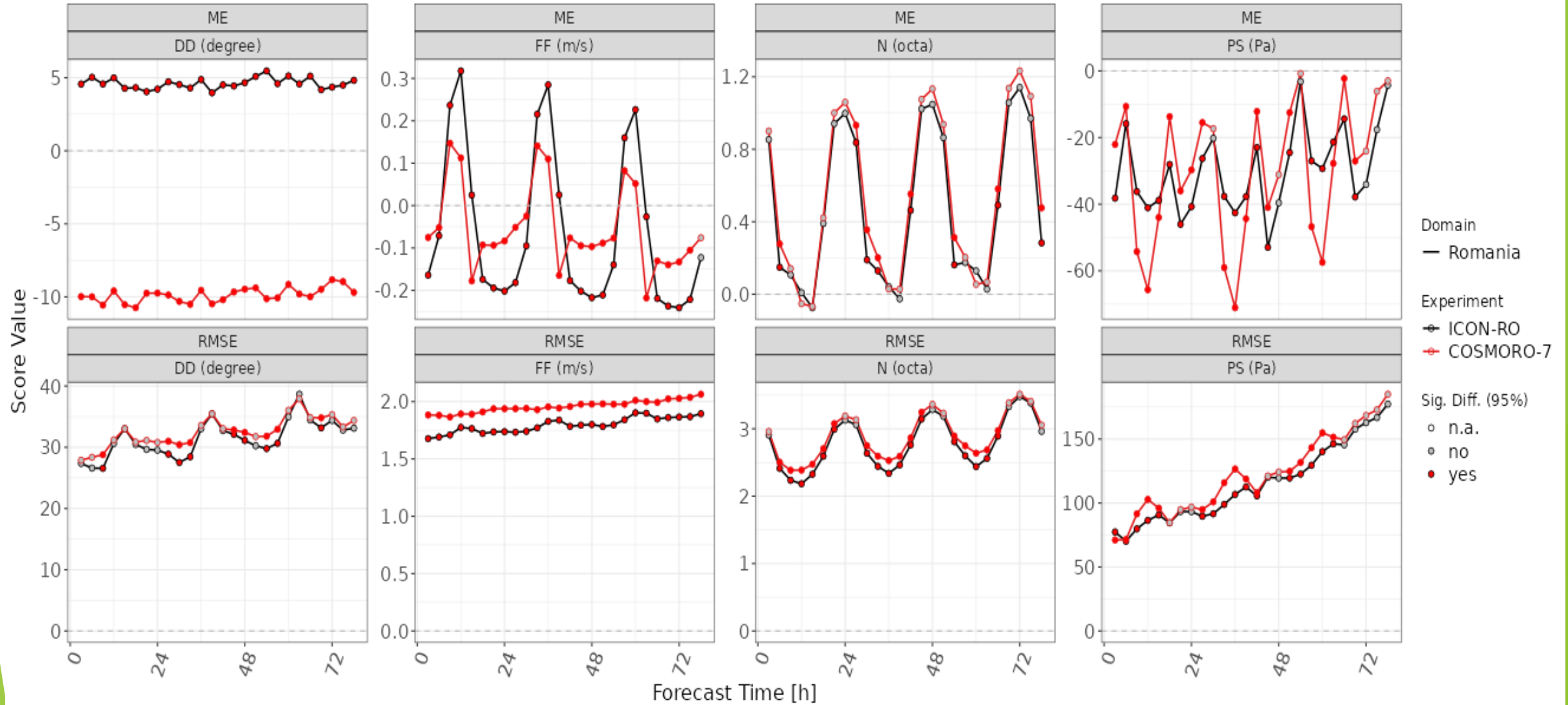
COSMO General Meeting –11-15 September 2023

Introduction

- **The verification was performed using the verification suite MEC/FFV2 and national verification tool**

- **NMA database of synoptic observations, including all 168 stations, is used**
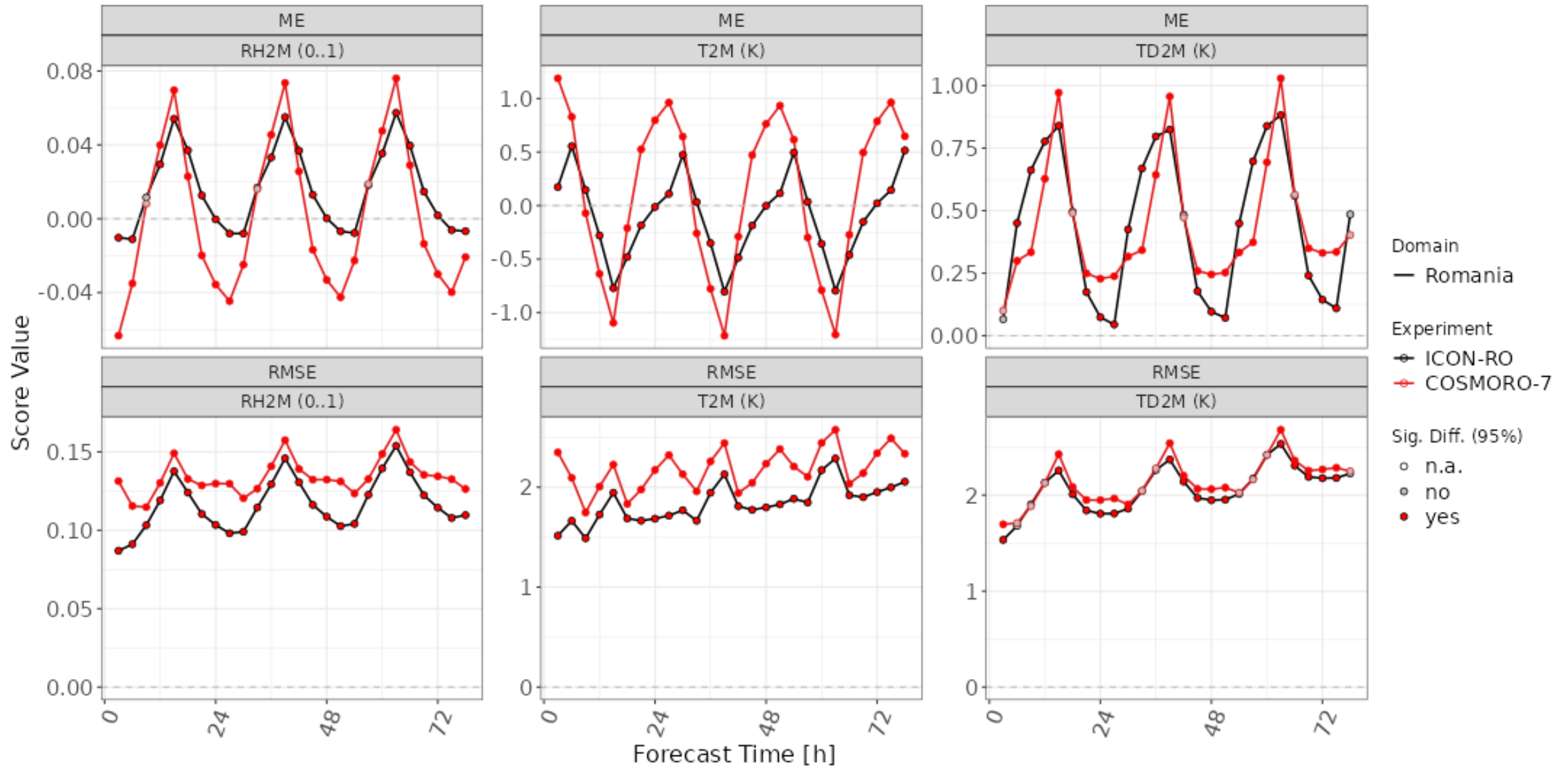
- **Feedback Files are daily produced**

Continuous parameter annual verification(1)

Continuous parameters annual verification(2)

Continuous parameters annual verification
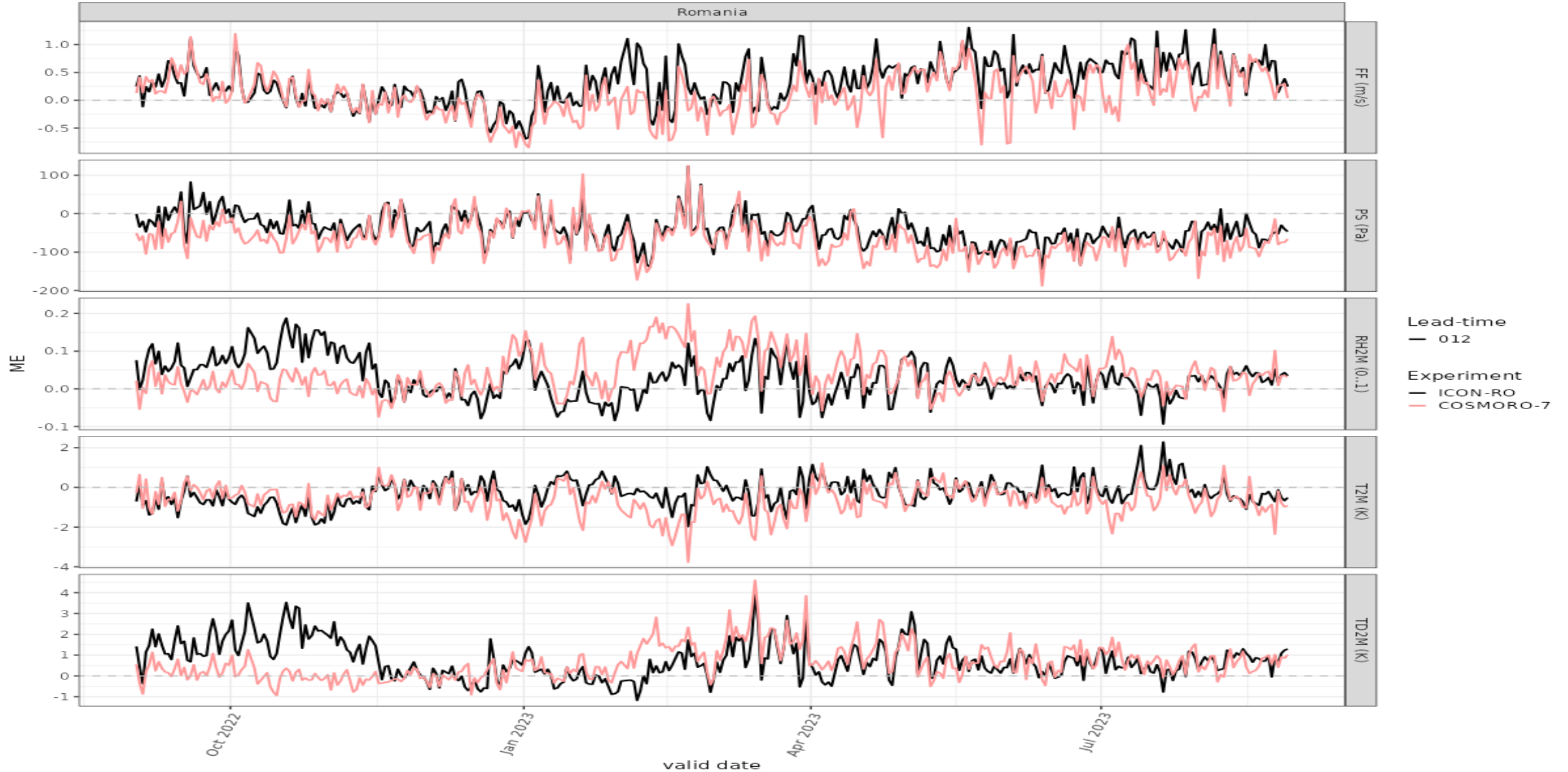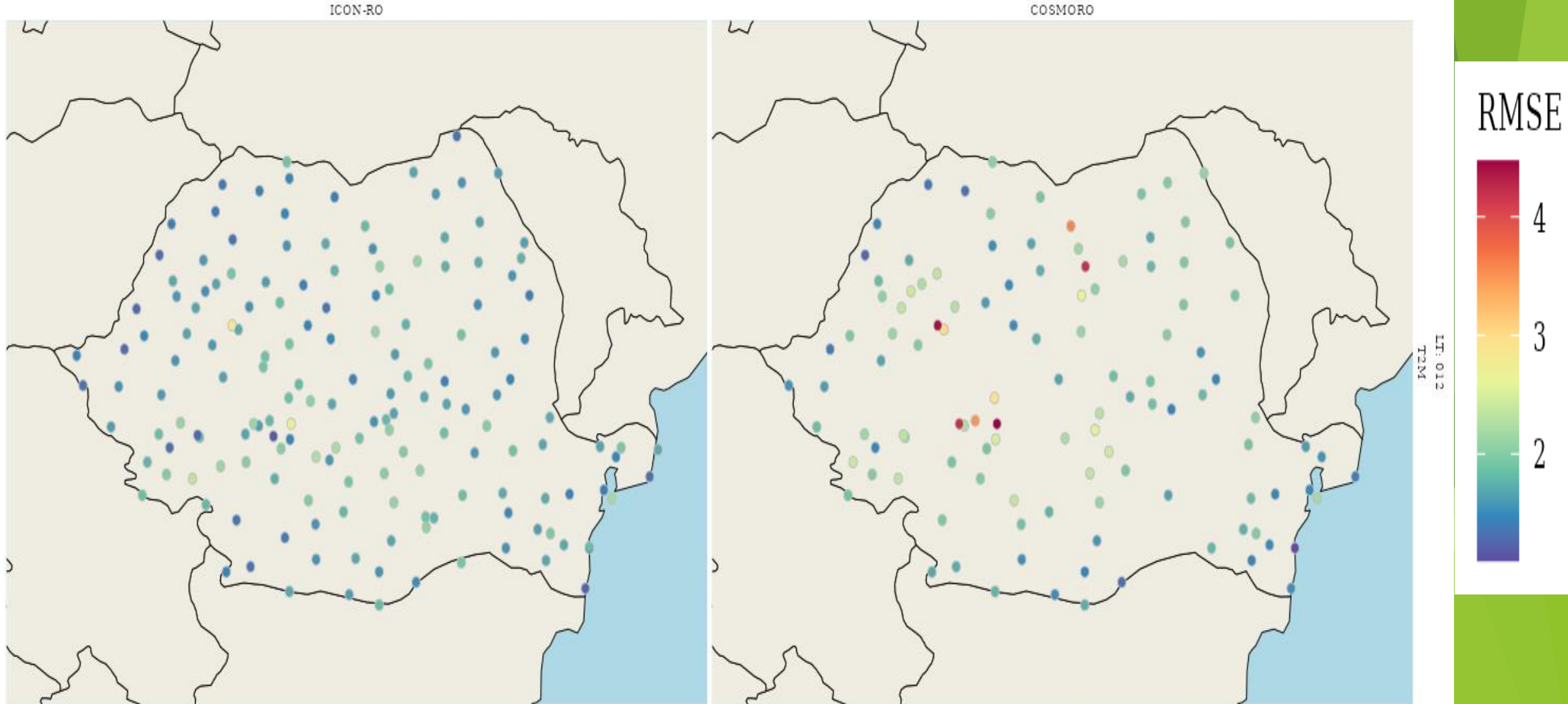## Time Series

2022.09.01-00UTC - 2023.08.28-21UTC
INI: 00 , DOMAIN: Romania , STATIONS: ALL

Continuous parameters annual verification
By Station

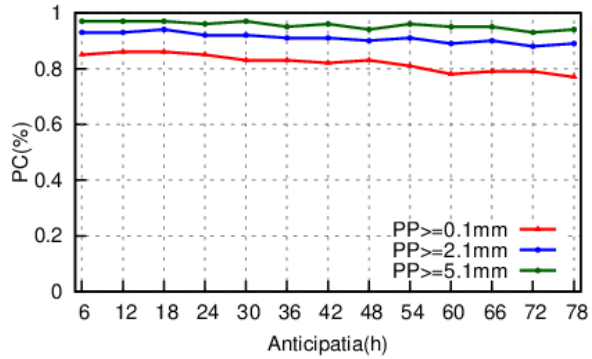2022.09.01-00UTC - 2023.08.28-21UTC
INI: 00

ICON-RO

COSMORO

RMSE

Categorical parameters – monthly verification

ICON-RO
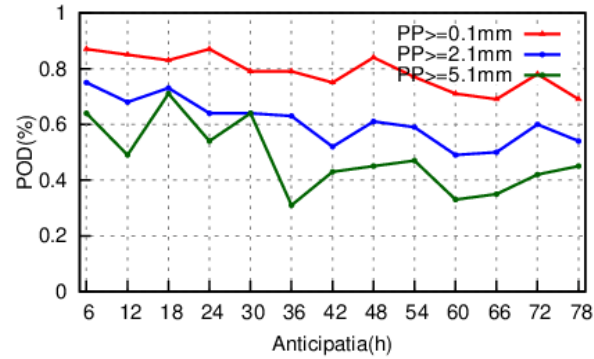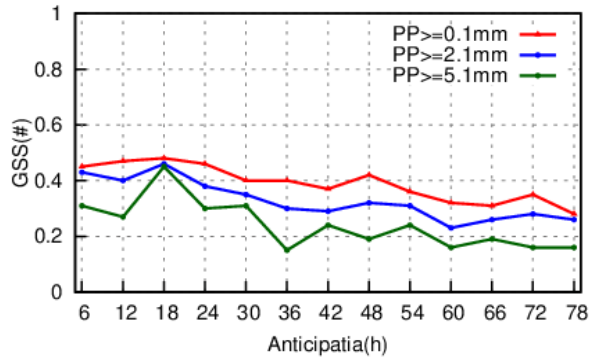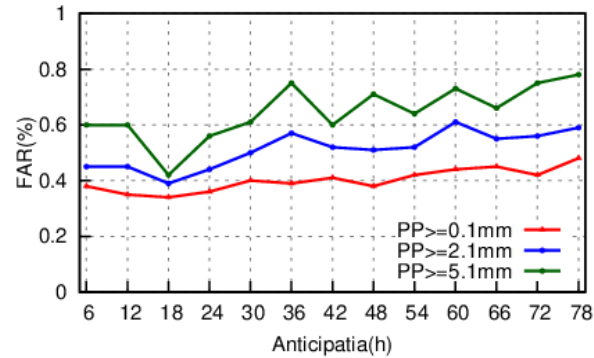
COSMO-RO
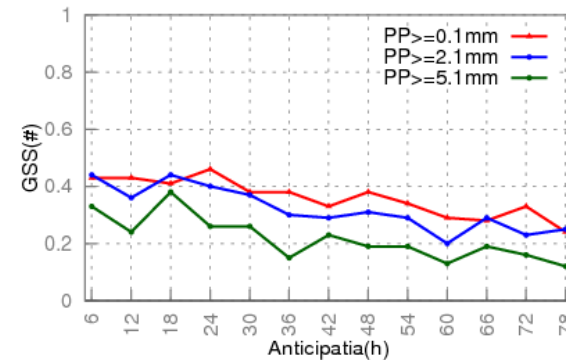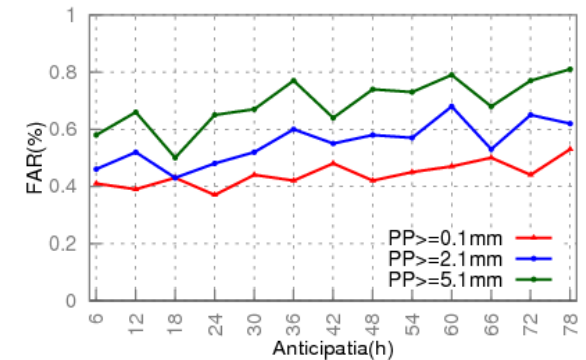
Categorical parameters – annual verification

ICON-RO
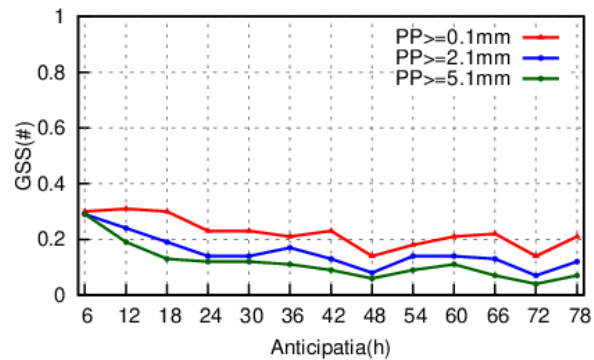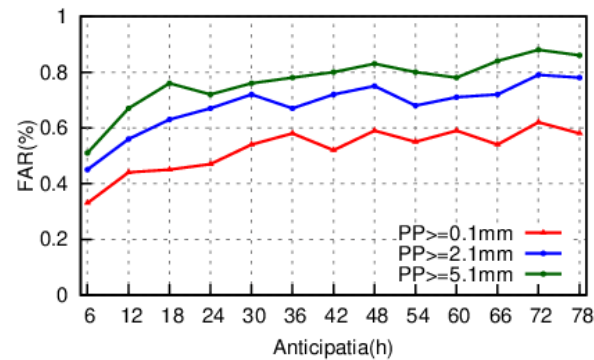
COSMO-RO
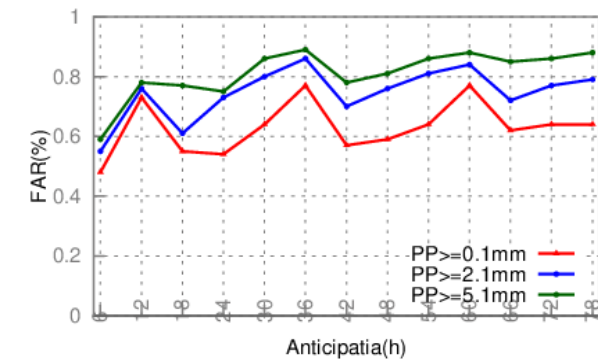
Comparison between all deterministic models used in NMA

January 2023 2 m Temperature – ME and RMSE
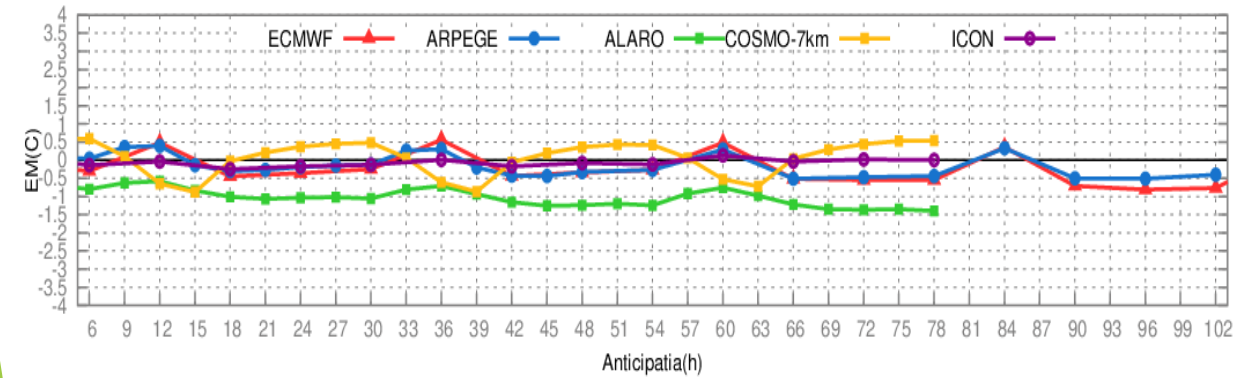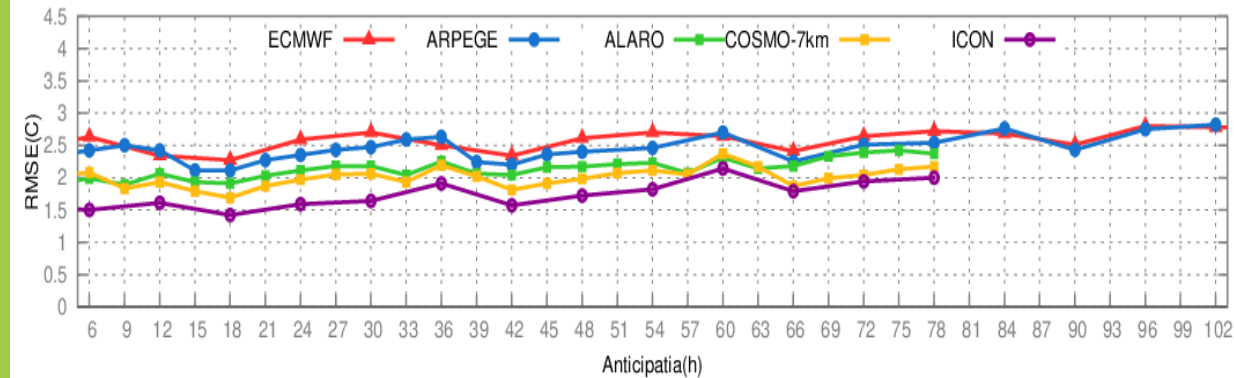
July 2023 2 m Temperature – ME and RMSE
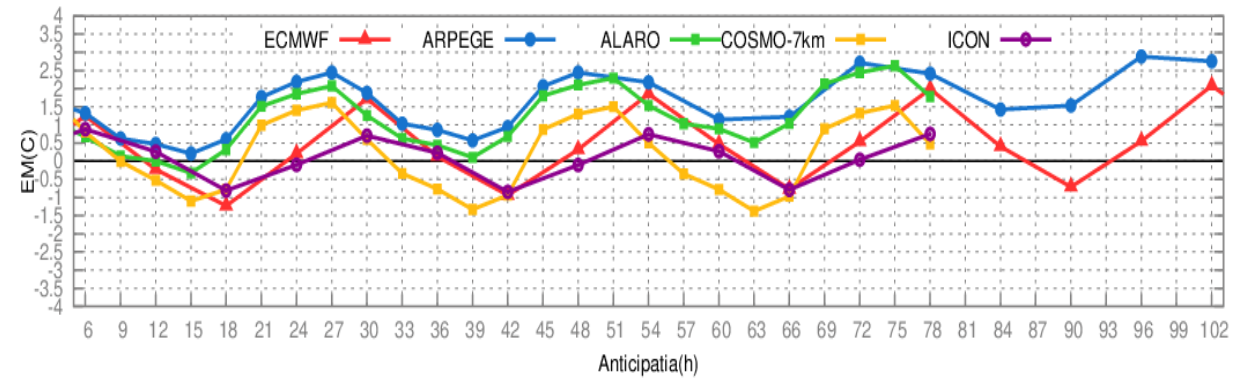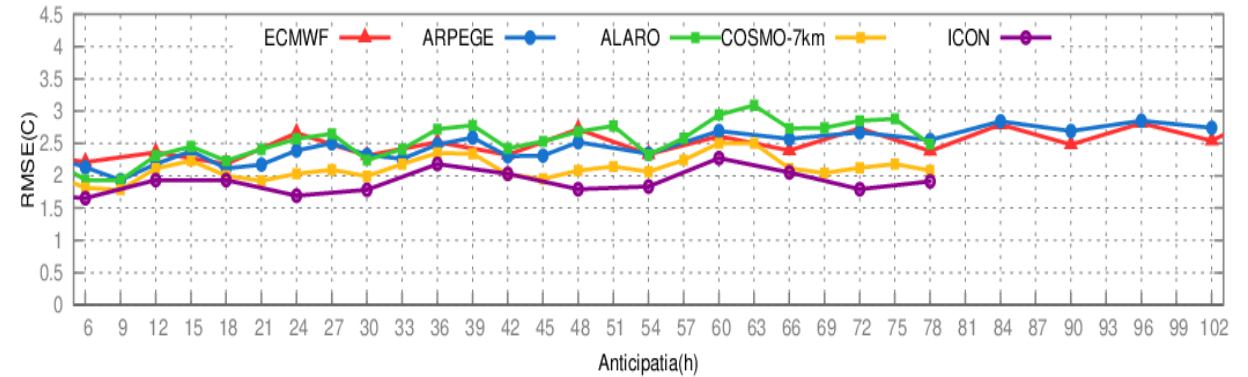
Comparison between all deterministic models used in NMA

January 2023 MSLP – ME and RMSE
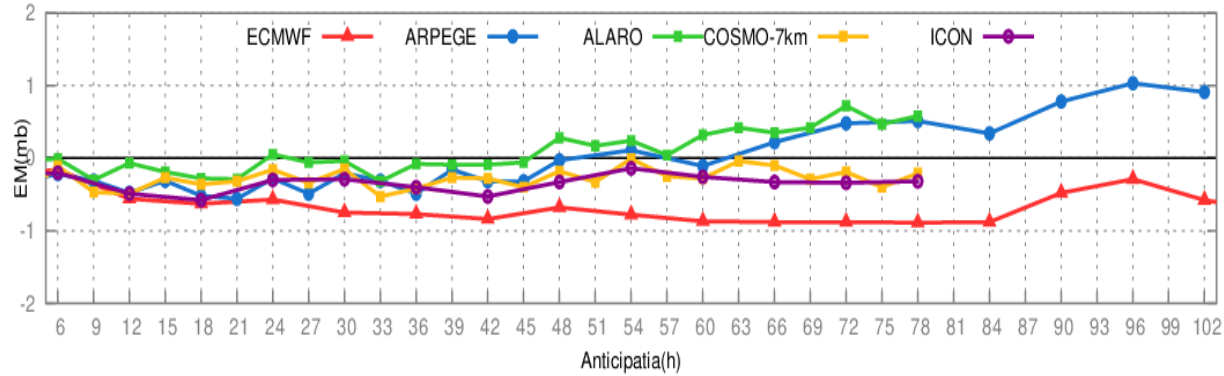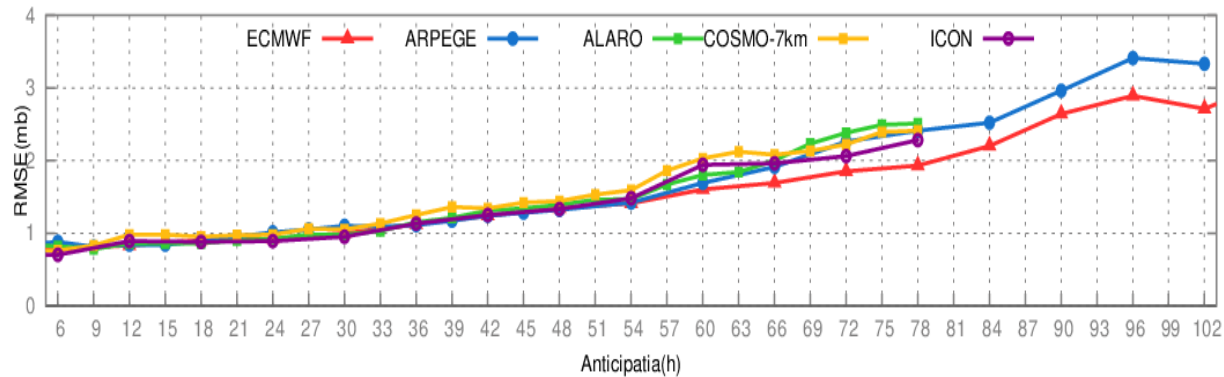
July 2023 MSLP – ME and RMSE
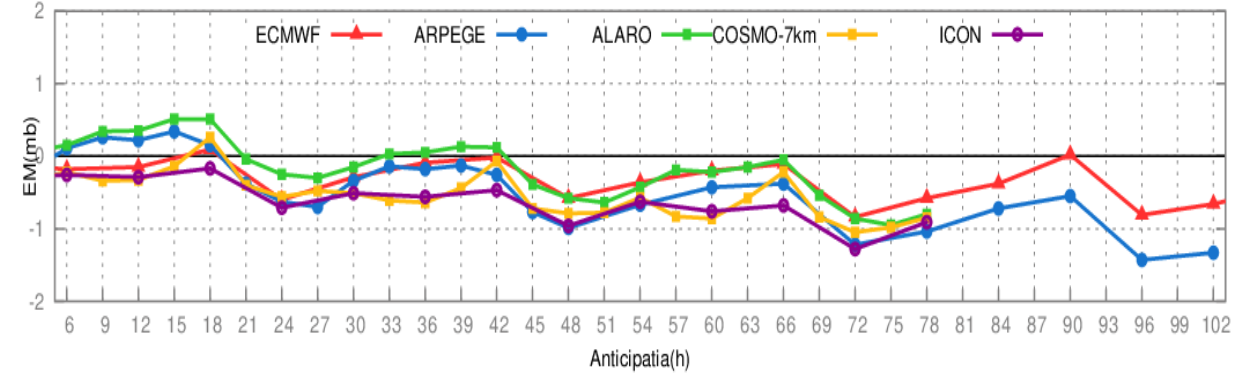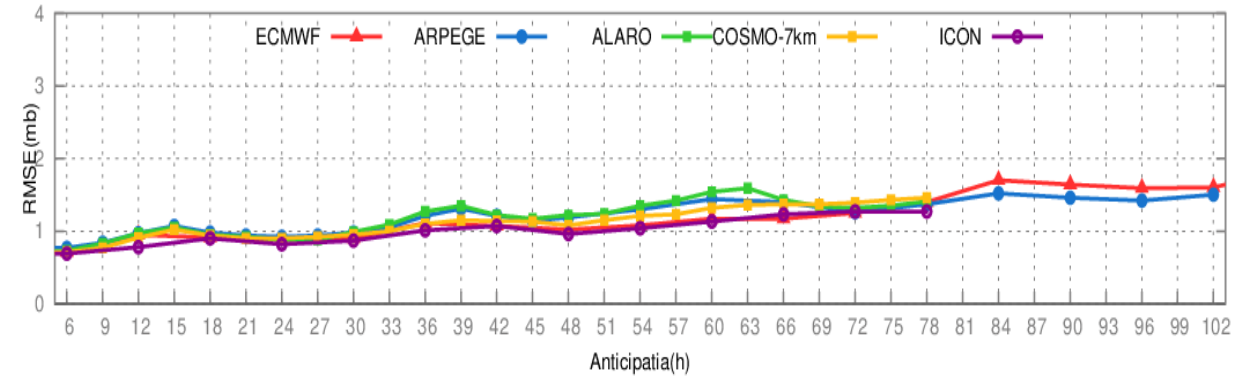
Comparison between all deterministic models used in NMA

January 2023 WS – ME and RMSE
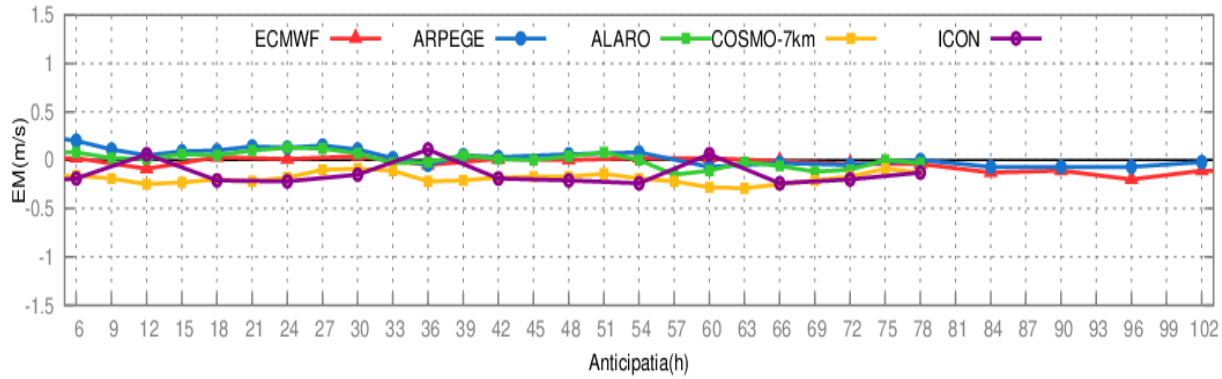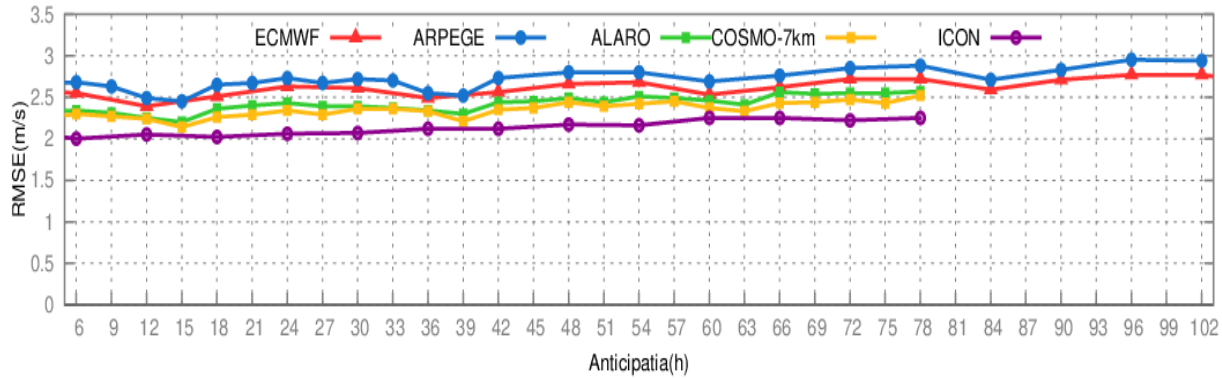
July 2023 WS – ME and RMSE
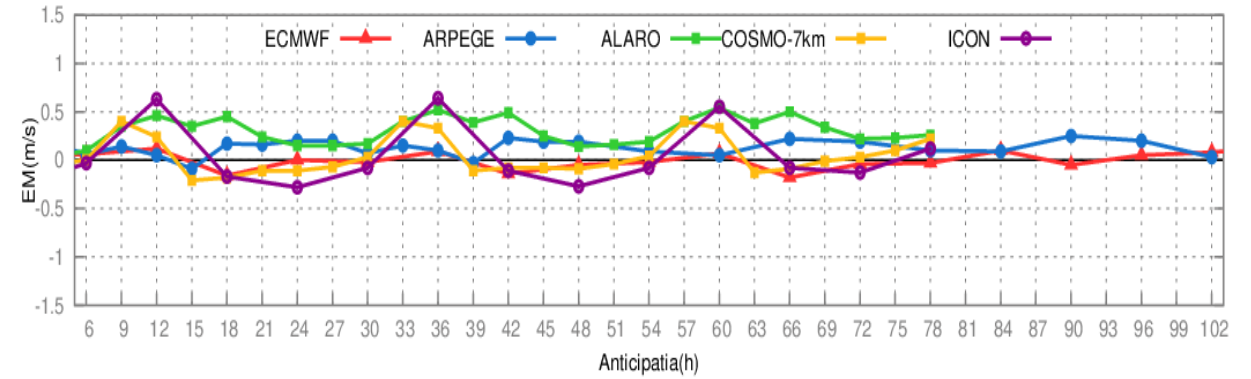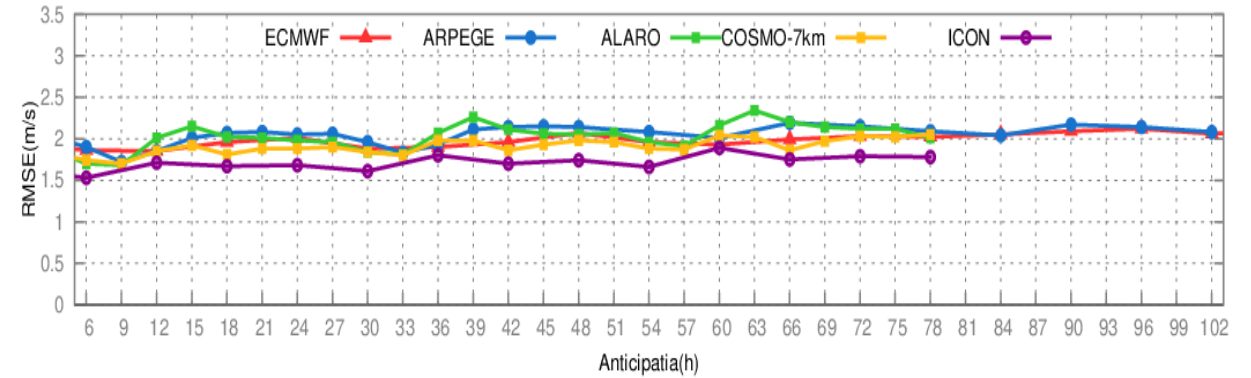
Comparison between all deterministic models used in NMA

January 2023 6h precipitation – GSS

January 2023 6h precipitation – GSS 0
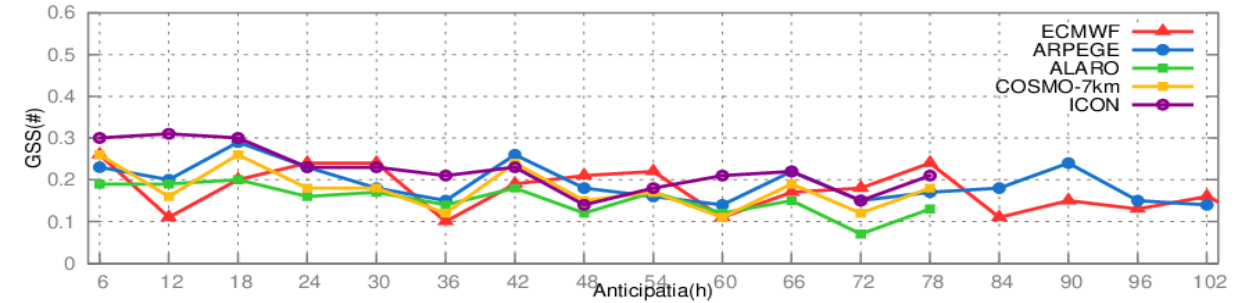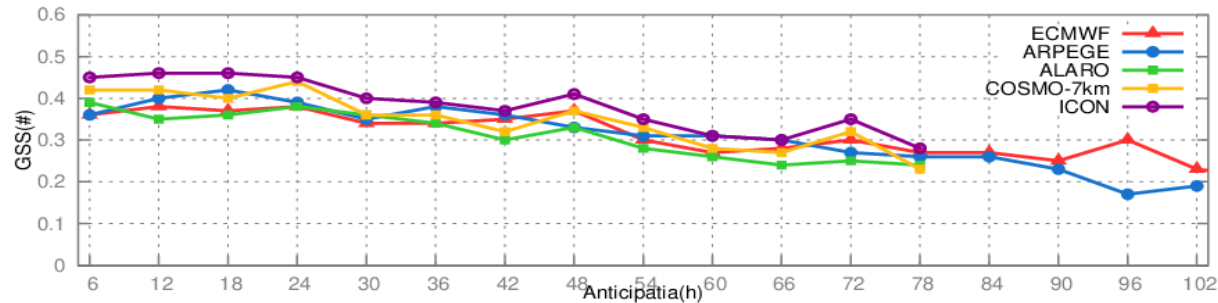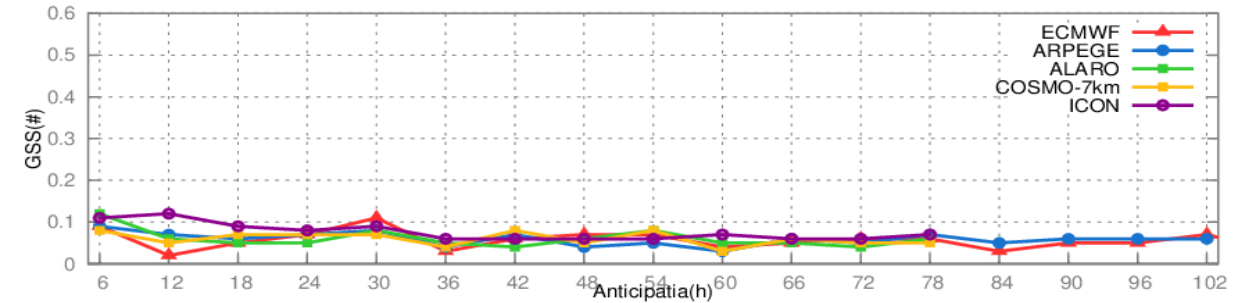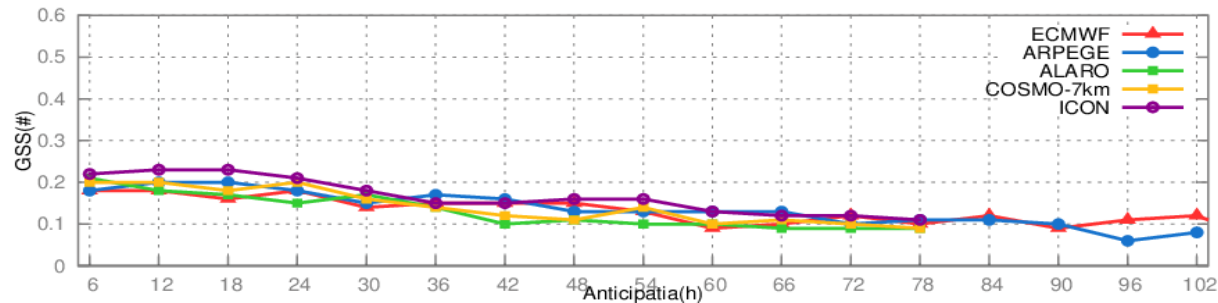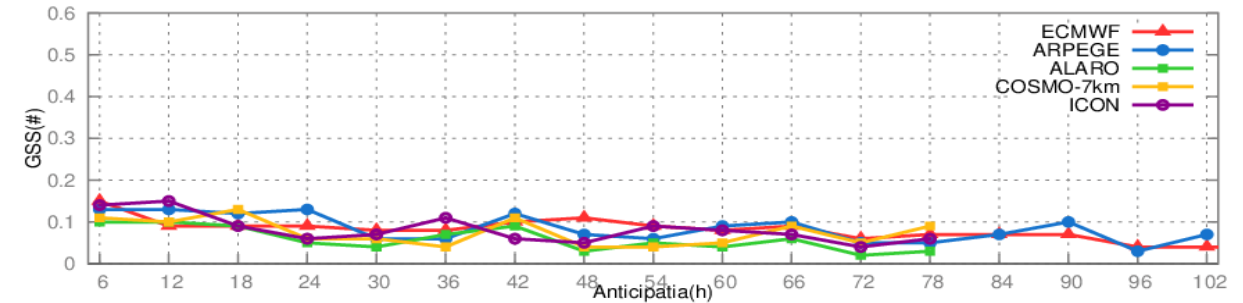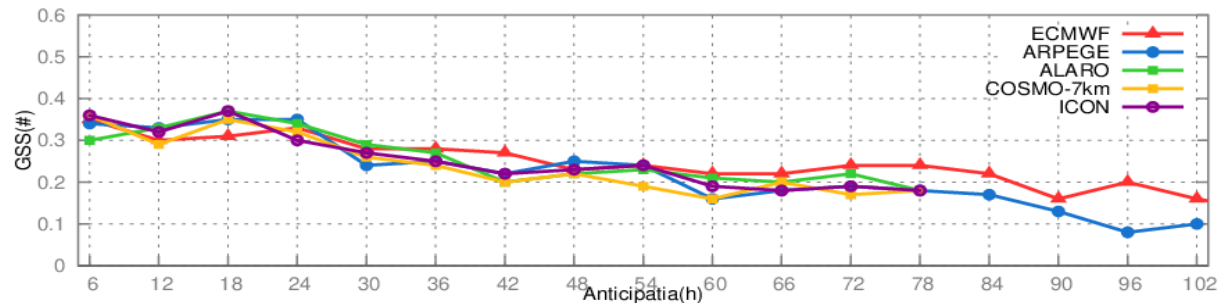
CONCLUSION

▶ From the annual evaluation scores obtained using MEC/FFV2 we conclude that both models ICON and COSMO:

▪ overestimate the forecast for the wind speed, cloud cover, mean sea level pressure, relative humidity and 2 m dew point temperature during the day time and underestimates during the night time

▪ overestimate the forecast for the 2 m temperature during the night time and underestimates during the day time

▶ From the time series verification scores it can be observed an improvement in the forecast of the 2m temperature, wind speed, relative humidity and dew point temperature for icon 2.6.5 compared with the previous version icon 2.3.0 and a decrease in the skill of the forecast for wind speed.

▶ From the scores computed with the national verification tool can be observed that for both winter and summer months the ICON model outperforms the rest of the models used in operational forecast activity in NMA.

Thank you for your attention!