

WG VA: Common Plots Updates

Amalia Iriza-Burca (NMA)

Contributors: F. Fundel (DWD), F. Gofa (HNMS), N. Vela (ARPA-PT), I. S. Gabrian (NMA), S. Dinicila (NMA), D. Boucouvala (HNMS), N. Zaccariello & F. Batignani (CNMCA), A. Surowiecki (IMGW-PIB), A. Pauling (MCH), P. Khain (IMS), T. Gastaldo (ARPAE), M. Bogdan (NMA), ...

Thank you to Flora for all the hard work, support and dedication during these 13 years as WGc

I am confident for a great collaboration also from now on.

1. MEC-FFV2 Seasonal Management 0.3 FTE

Person: **S. Gabrian, S. Dinicila, NMA**

2. A. Retrieve observations from MARS, convert to netcdf, upload 0.08 FTE
NMA

Person: **M. Bogdan,**

2. B. Retrieve files from OPERA, convert to grib, upload on server 0.03 FTE
HNMS

Person: **F. Gofa,**

3. Preparation of FF for “Common models”- IFS 0.05 FTE

Person: **F. Fundel, DWD**

4. Preparation of FF for “Common models”- ICON-Gb 0.05 FTE Person: **F. Fundel, DWD**

5. Preparation of FF files for “Common models”- COSMO/ICON-LEPS 0.05 FTE

Person: **D. Boucouvala, HNMS**

6. Spatial Verification (VAST) 0.1 FTE

Person: **N. Vela, ARPA-PT**

7. A. Seasonal scores: Det models: 0.1 FTE

Person/service: **M. Bogdan (NMA), F. Fundel (DWD), D. Boucouvala (HNMS), N. Zaccariello & F. Batignani (CNMCA), A. Surowiecki (IMGW-PIB), A. Pauling (MCH), P. Khain (IMS), T. Gastaldo (ARPAE)**

7. B. Seasonal scores: EPS models 0.1 FTE

Person/ service: **F. Fundel (DWD), P. Khain (IMS), A. Pauling (MCH), T. Gastaldo/ D. Cesari/ A. Frigato (Arpae), A. Surowiecki (IMGW-PIB)**

8. Reporting 0.05 FTE

Person: **WG V/A chairs**

SPRT: FTEs will be reported centralized by the WG VA co-chairs, to simplify the procedure.

NEW

Repository for the documentation and templates regarding the installation and usage of the MEC-FFV2 (formerly RFDBK) is now hosted on the **dkrz git/ PP CARMENs project**.

CP Activities**Summary of 2025/2026**

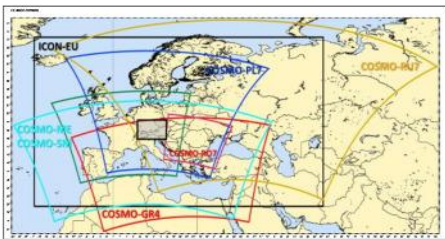
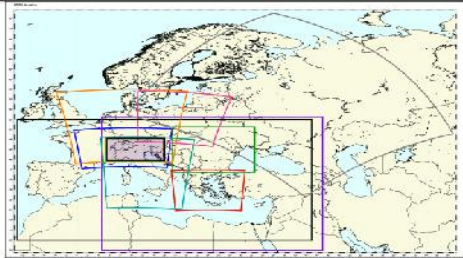
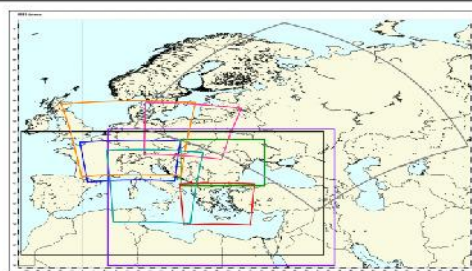
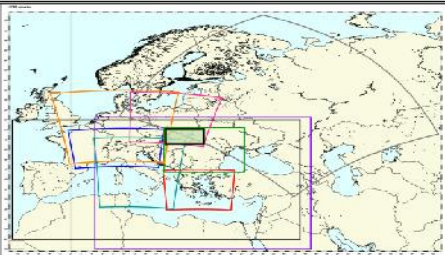
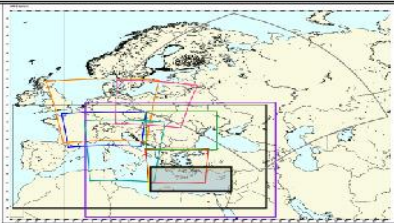
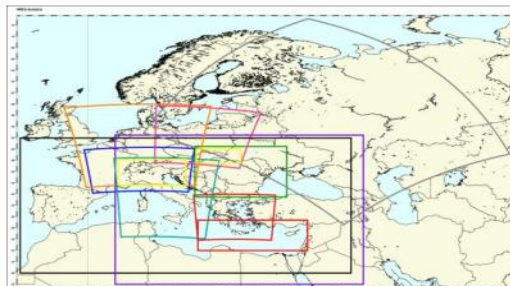
- CP scores uploaded to the COSMO shiny server (deterministic & Fuzzy), up to MAM26.
- Some delays due to missing data and lack of human resources.
- **Issue (valid for DET & Fuzzy) - delay in providing data**

Verification Features:

- **continuous and categorical parameters** (domain average, station average, time series, against SYNOP stations)
- **upper air** (domain average, station average, time series, against SYNOP stations)
- **conditional verification available**. Currently 2mT/Cloud Cover

Specifications

- Files submission (seasonal or monthly basis): All files to be uploaded on seasonal/monthly/daily basis on the NMA ftp server: **193.26.129.30**, user: icon (for password contact us):
 - OBS_NC: netcdf observations
 - PRECI-GRIB: 3h precipitation GRIB files (for spatial verification)
 - CARMA (Forecast files): MEC derived files
- **Observations** (SYNOP and TEMP) in netcdf format available on NMA ftp server daily
 - Also available on the ATOS HPC for those who require it
- **COSMO-LEPS** control files are processed (MEC) at Atos HPC on a monthly basis
- *Cleanup of past years files is necessary in COSMO shiny server (folders, content not visible unless moved)*

Common Plots Areas			
	ComA-1	ComA-2	NoComA (National Domains)
Specs	 Forecast run: 00UTC Forecast Horizon: 48h Seasons: JJA24, SON24, DJF25, MAM25	 Forecast run: 00UTC Forecast Horizon: 48h Seasons: JJA24, SON24, DJF25, MAM25 Area: 43.5/5.0/48.2/16.0	 Area: national domains Forecast Horizon: variable Seasons: JJA24, SON24, DJF25, MAM25
Models	Global: ICON, IFS, LEPScntr LAMs: DWD: ICON-EU, COMET: COSMO-ME IMGW-PIB: COSMO-PL7	Driving models: ICON-EU, IFS, ICON, LEPScntr LAMs: DWD: ICON-D2, MCH: COSMO-1E (control), COSMO-2E, HNMS: ICON-GR COMET: COSMO-I2, ICON-I2, ARPA-E: COSMO-2I IMS: ICON_IL2p5	COSMO and ICON-LAM DWD, MCH, COMET, HNMS, IMGW-PIB, NMA, RHM, IMS, ARPA-E
	ComA-3	ComA-TCC	ComA-OnDemand
Specs	 Forecast run: 00UTC Forecast Horizon: 48h Seasons: JJA24, SON24, DJF25, MAM25 Area: 47.5/17.7/50.0/25.0	 Forecast run: 00UTC Forecast Horizon: 48h Period: Postponed Area: 31.0/18.0/37.4/32.0	
Models	Driving models: ICON-EU, IFS, ICON, LEPScntr LAMs: HNMS: ICONGR2.5, NMA: COSMO-NMA/ICON-NMA, IMGW-PIB: ICON-PL, IMS: ICON-IL2.5	Driving models: IFS, ICON LAMs: HNMS: ICONGR2.5, IMS: ICON_IL2p5, ICON-EU	Area and LAMs, Specs based on specific experiment

Common Plots: verification specifications	
Parameters	Surface: Continuous T2m, SurfPressure, Td, WSpeed, TCC Surface: Dichotomic 6h Precip (Thresholds): 0.2, 0.8, 1.5, 8, 10, 15, 20 mm TCC (Intervals): [0, 25], (25, 75), [75, 100] Wind gust(thresholds): 12.5, 15, 20 m/sec Upper Air: Temperature, RH, Wind Speed Areas: ComA-1, ComA-2, ComA-3, NoComA
Stratification	-100m, 100m-300m, 300m-800m and >800m Areas: ComA-1, ComA-2, ComA-3, NoComA
PointVerif Indices	Surface - Continuous/UpperAir: ME, RMSE, StdDv Surface – Dichotomic: Contingency table attributes: FBI, ETS, CSI Areas: ComA-1, ComA-2, ComA-3, NoComA
SpatialVerif Precipitation	Obs: OPERA composite Indices: FSS, POD, FAR, FBI, TS Spatial windows: 2.8, 8.4, 14, 25.2, 47.6, 92.4km Areas: ComA-2, ComA-3 Resolution: 0.025
SpatialVerif Total Cloud Cover <i>Postponed</i>	Obs: NWC-SAF Cloud Mask Indices: FSS, FBI, TS Spatial windows: 2.8, 8.4, 14, 25.2, 47.6, 92.4km Thresholds: 0, 20, 40, 60, 80, 100% Areas: ComA-TCC Resolution: 0.025
Conditional	Critical Choices: conditions imposed on the observations, alignment is ON A. 2mT verification when: Total cloud cover $\geq$ 75% Total cloud cover $\leq$ 25% B. Wind Speed when: (roughness length as constant field) Roughness length $<$ 0.2m Roughness length $>$ 1m Areas: ComA-2, ComA-3

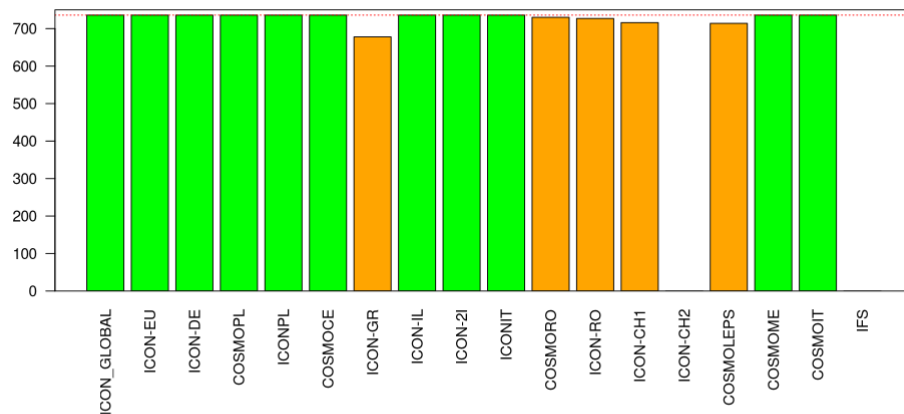
Operational models:

- ✓ DWD: **ICON-GLOBAL(0.117)**, **ICON-EU (0.0625)**, **ICON-D2 (0.02)**, **ICON-D2-EPS (0.02)**
- ✓ COMET: **ICON-IT (0.02)**
- ✓ IMGW-PIB: **COSMO-PL7 (0.0625)**, **COSMO-CE-PL2k8 (0.025)**, **ICON-PL (0.025)**, **COSMO-PL2k8TLE-eps (0.025)**
- ✓ HNMS: **ICON-GR (0.025)**
- ✓ MCH: **ICON-1E (0.01)**, **ICON-2E (0.02)**
- ✓ IMS: **ICON-IL (0.025)**
- ✓ NMA: **COSMO-RO7 (0.0625)**, **ICON-RO2p8 (0.025)**
- ✓ ARPAE-SIMC: **COSMO-2I-EPS (0.02)**, **ICON-2I (0.02)**
- ✓ Additionally: **COSMO-LEPS** and **IFS** (missing this year)

Driving models: **ICON-GLOBAL(0.117)**, **ICON-EU (0.0625)** and **IFS**

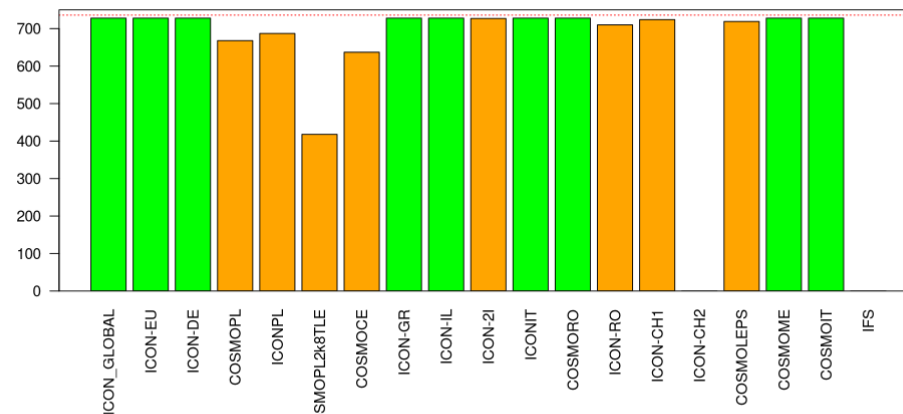
Ending: **COSMO-ME (0.045)**, **COSMO-2I(0.02)** (DJF26)

SYNOP FF Data Availability for JJA25



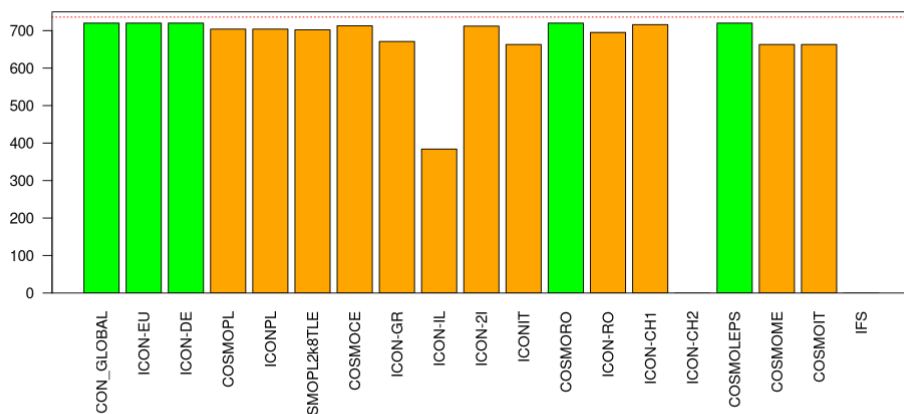
Model

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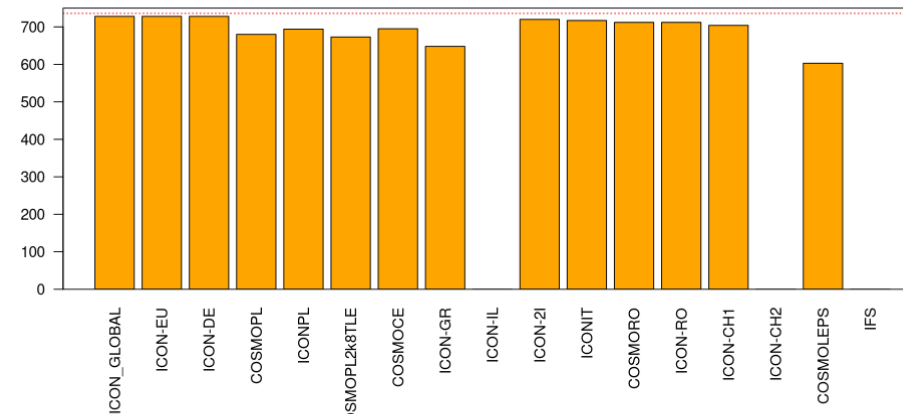
Model

SYNOP FF Data Availability for DJF26



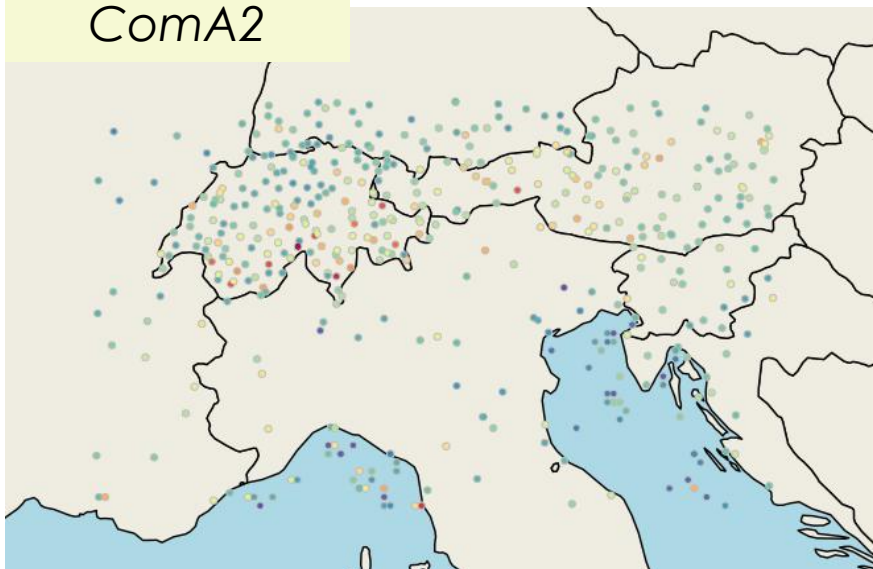
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SYNOP FF Data Availability for MAM26

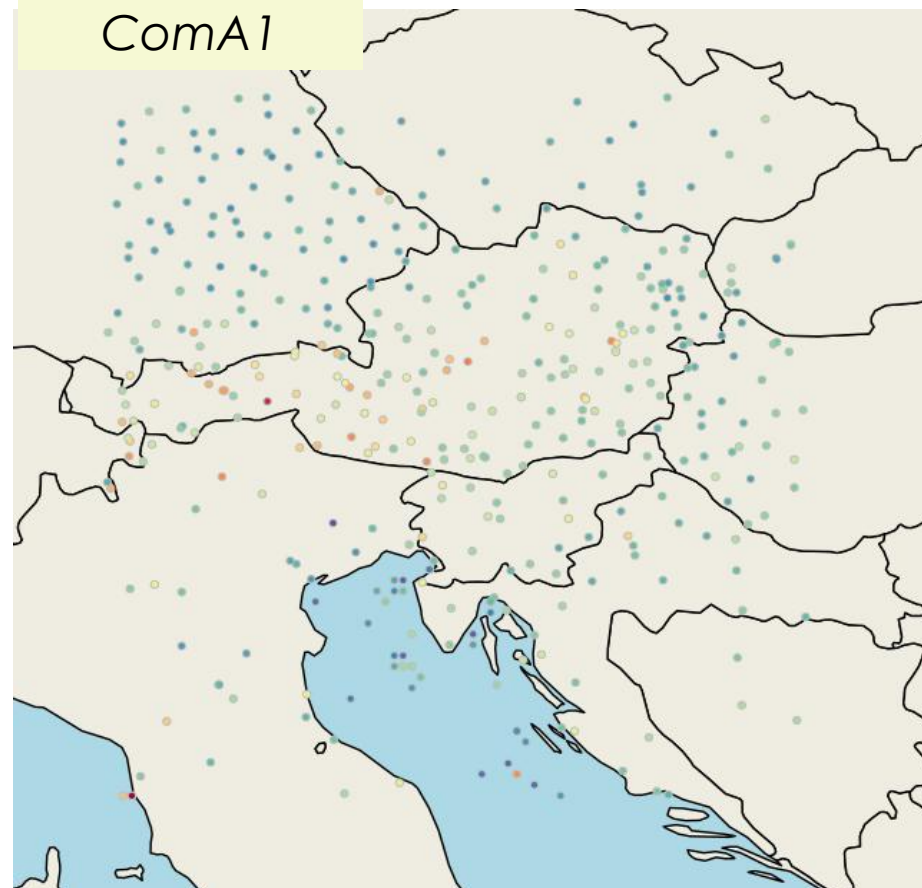


Model

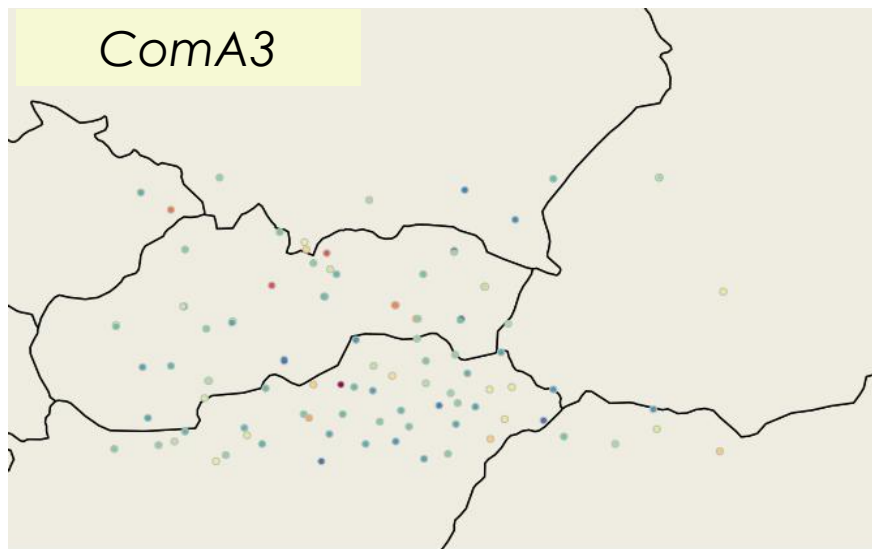
ComA2



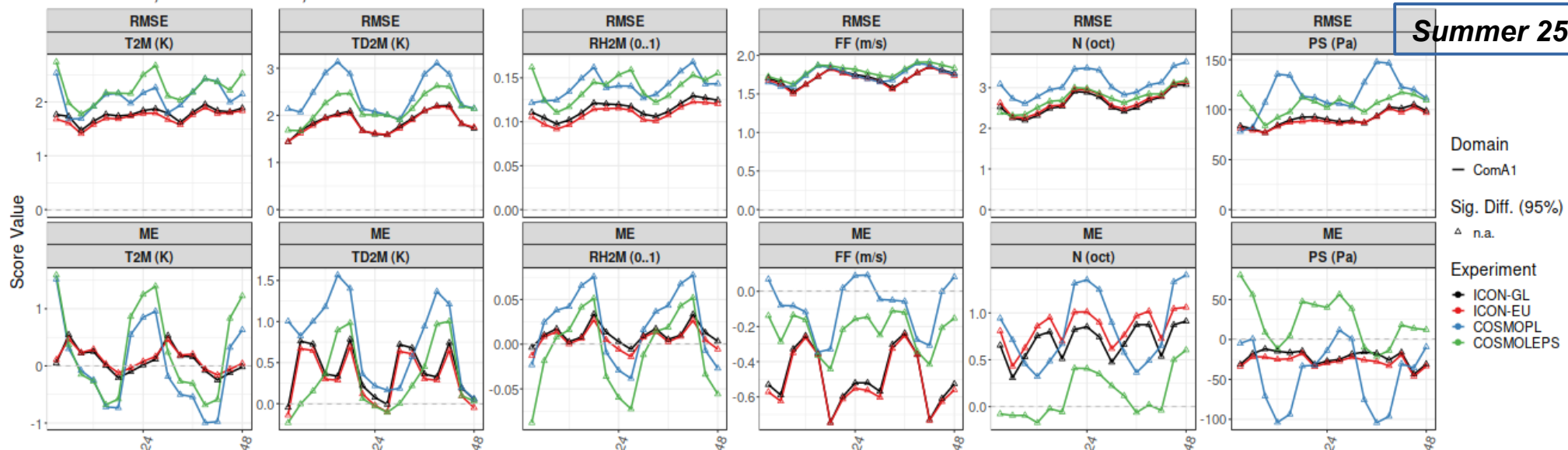
ComA1



ComA3

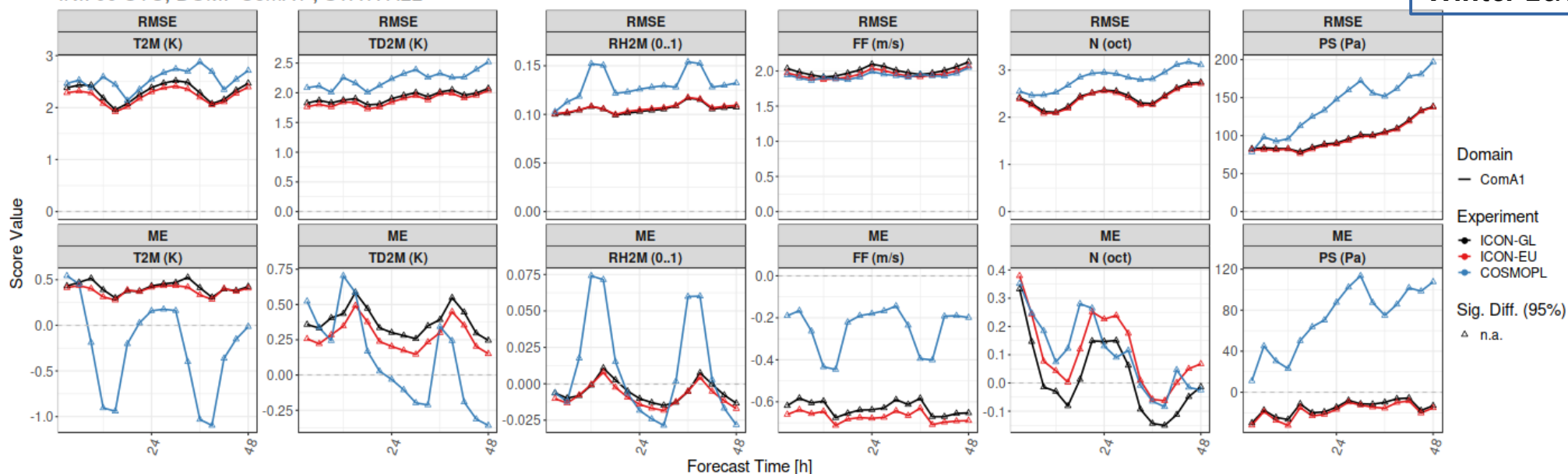


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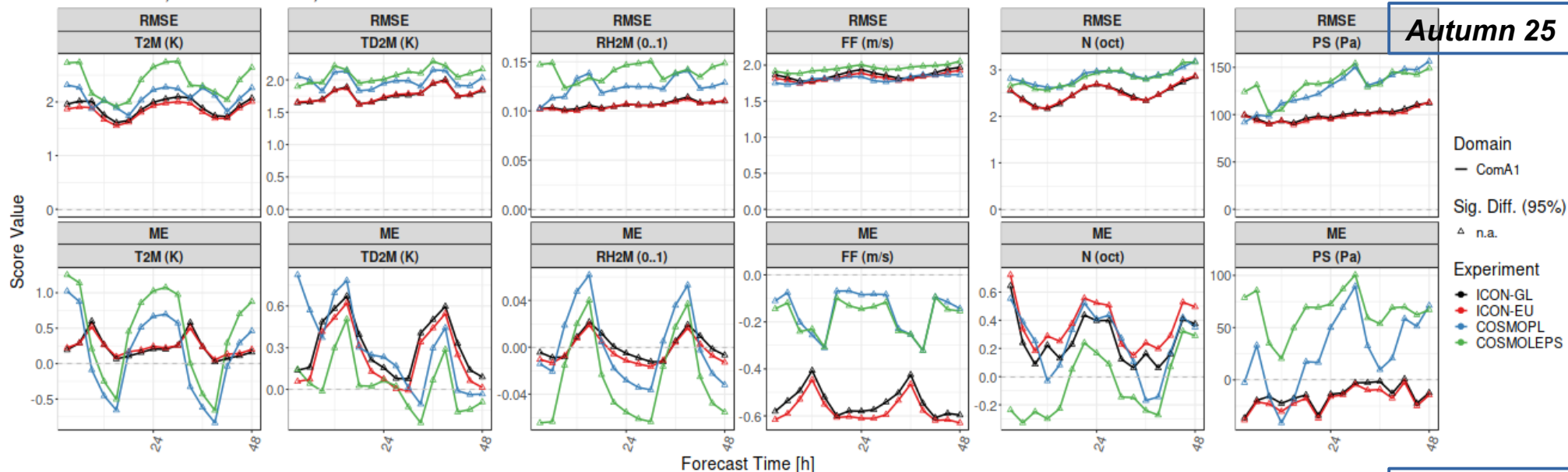


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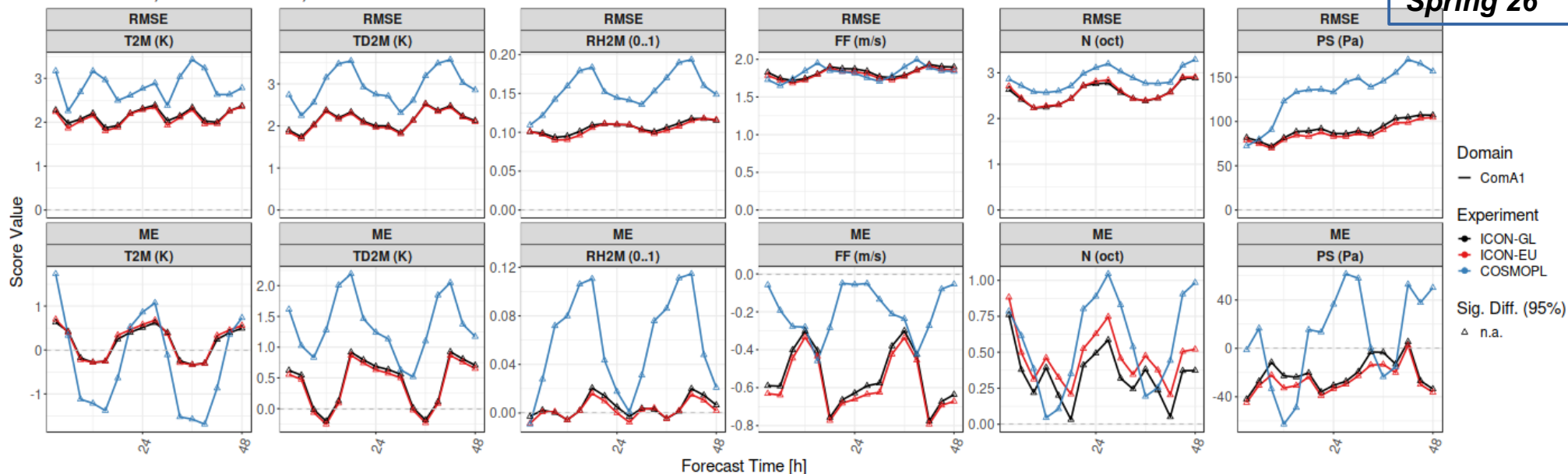
Winter 25/26



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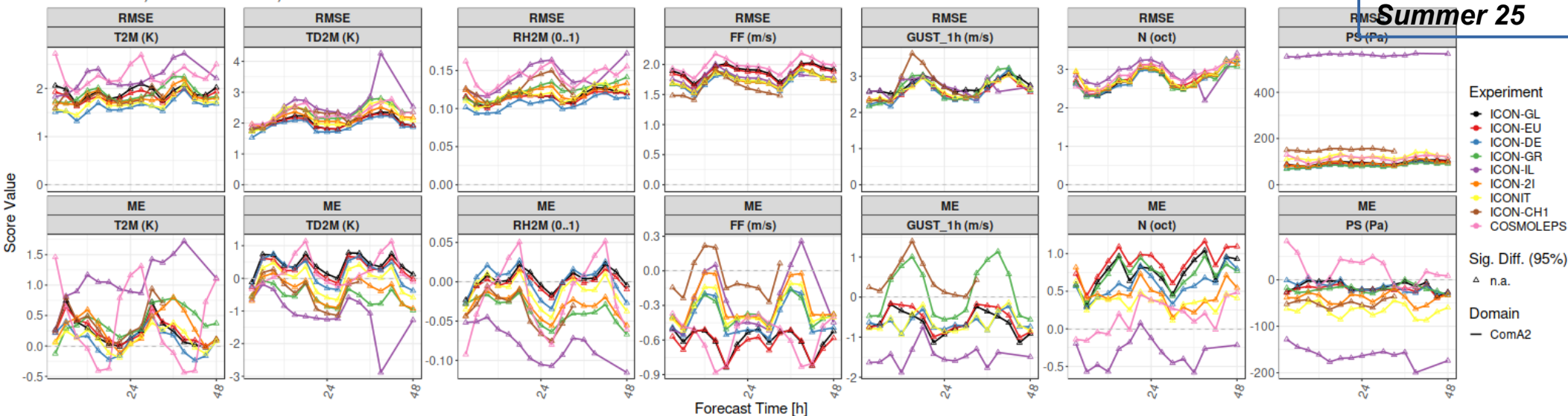
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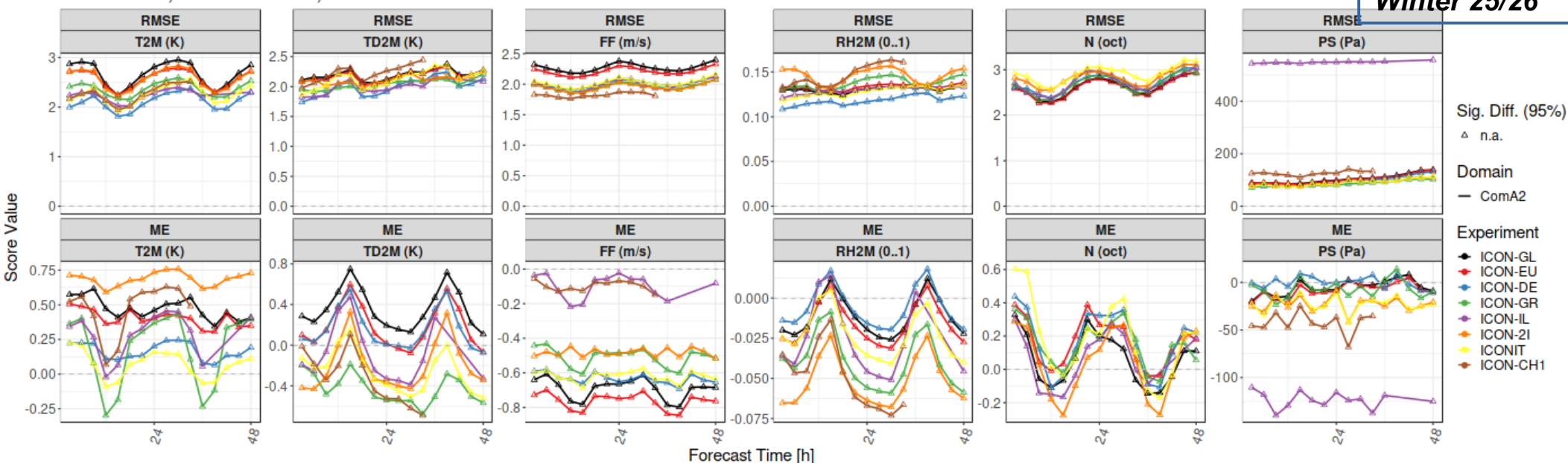
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Summer 25



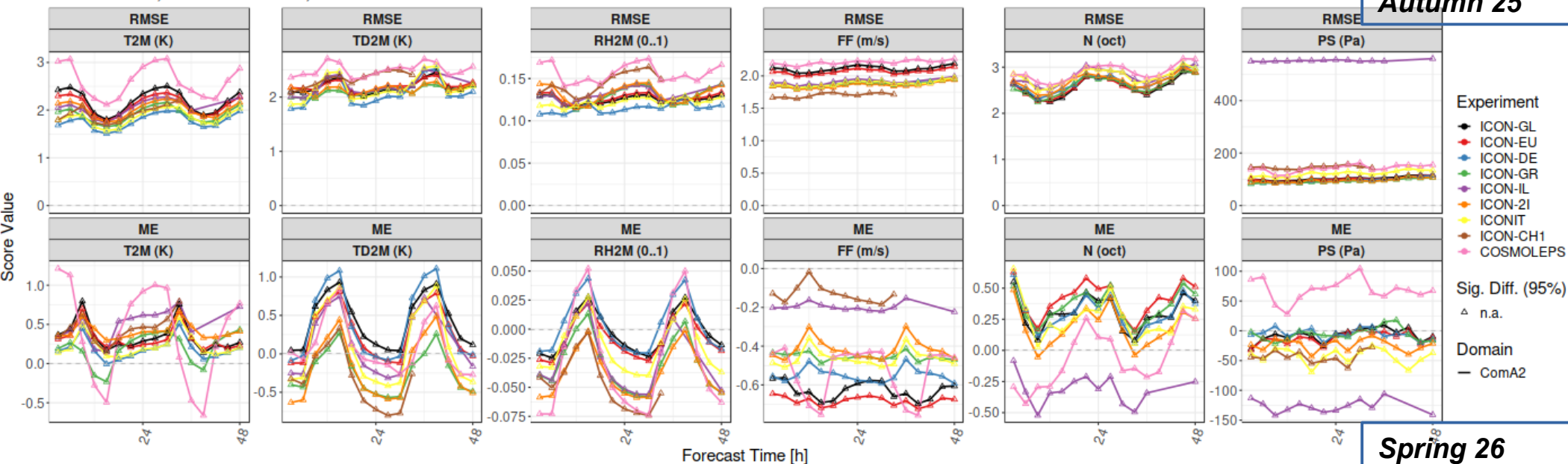
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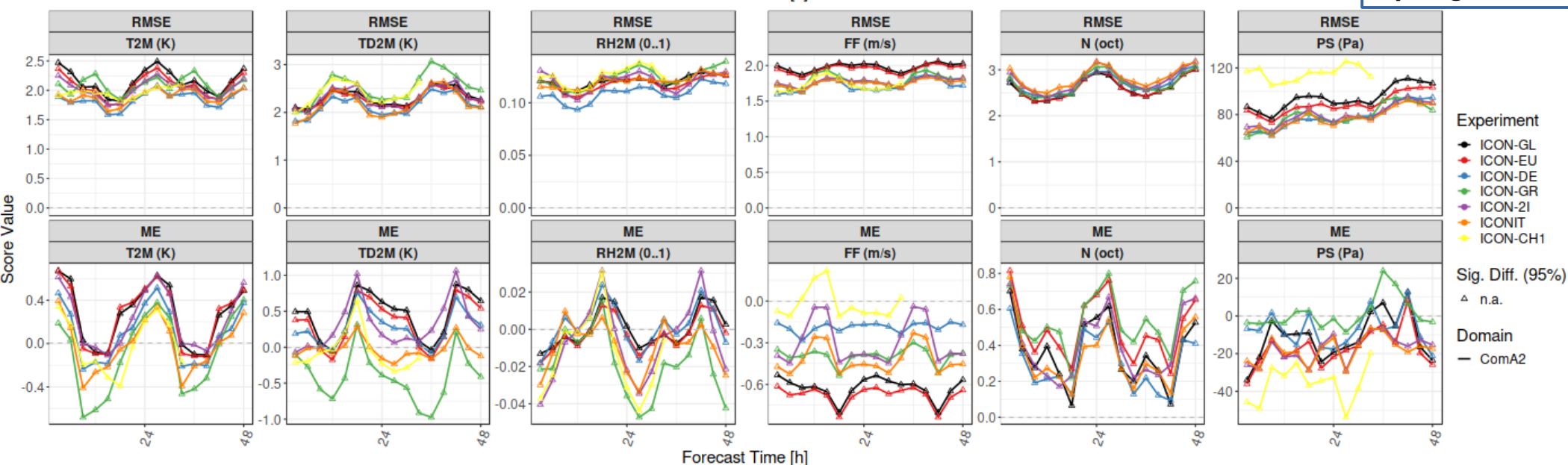


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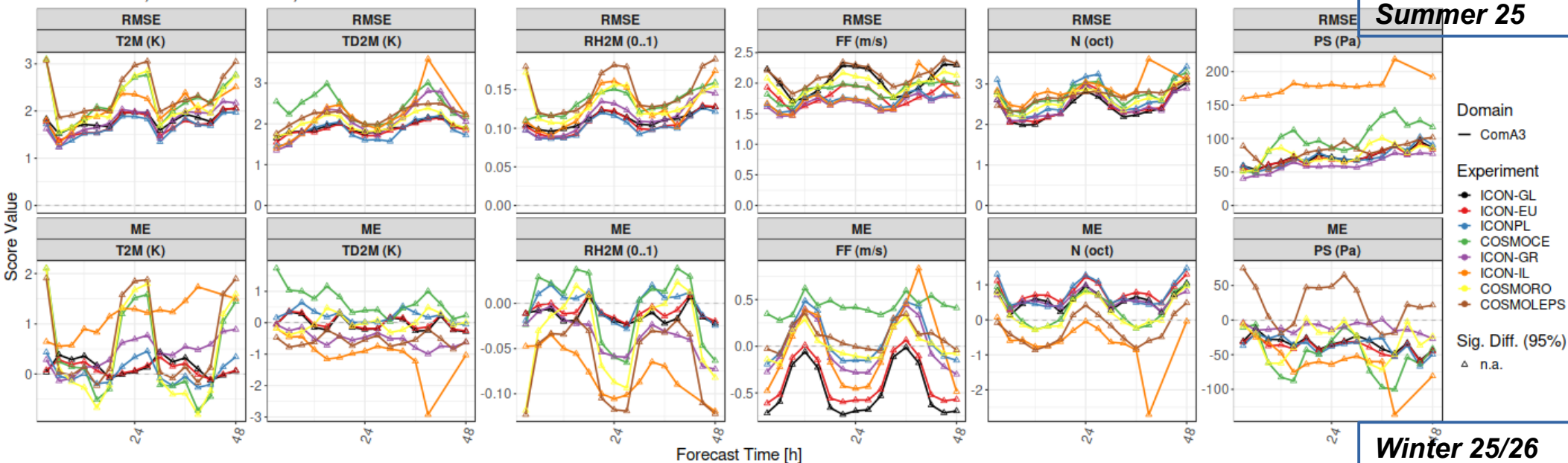


Spring 26

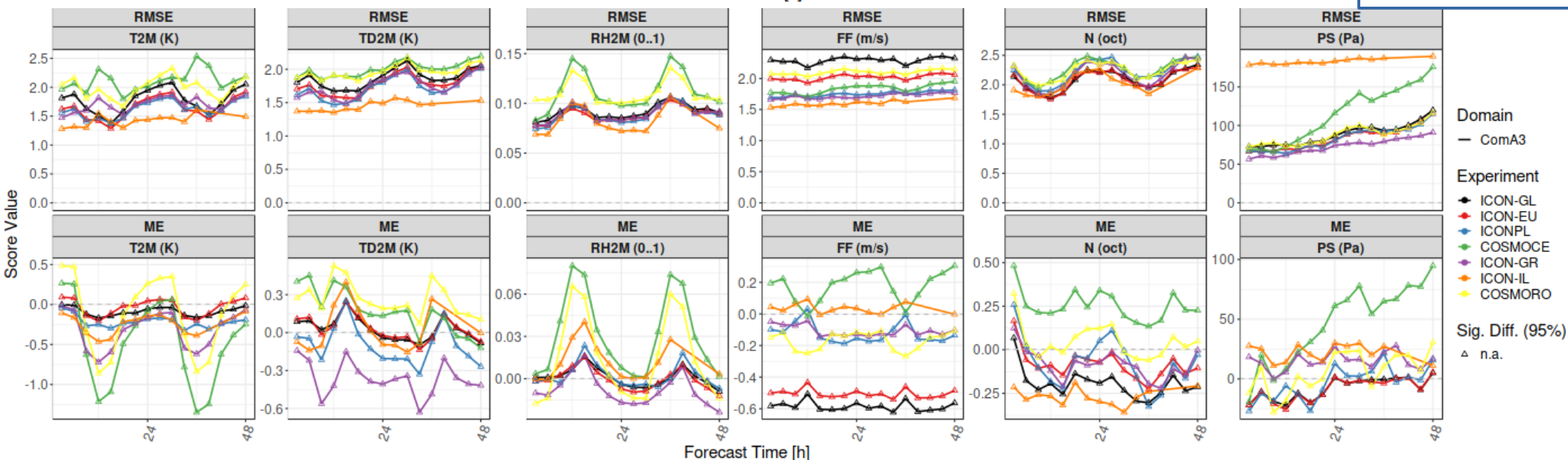


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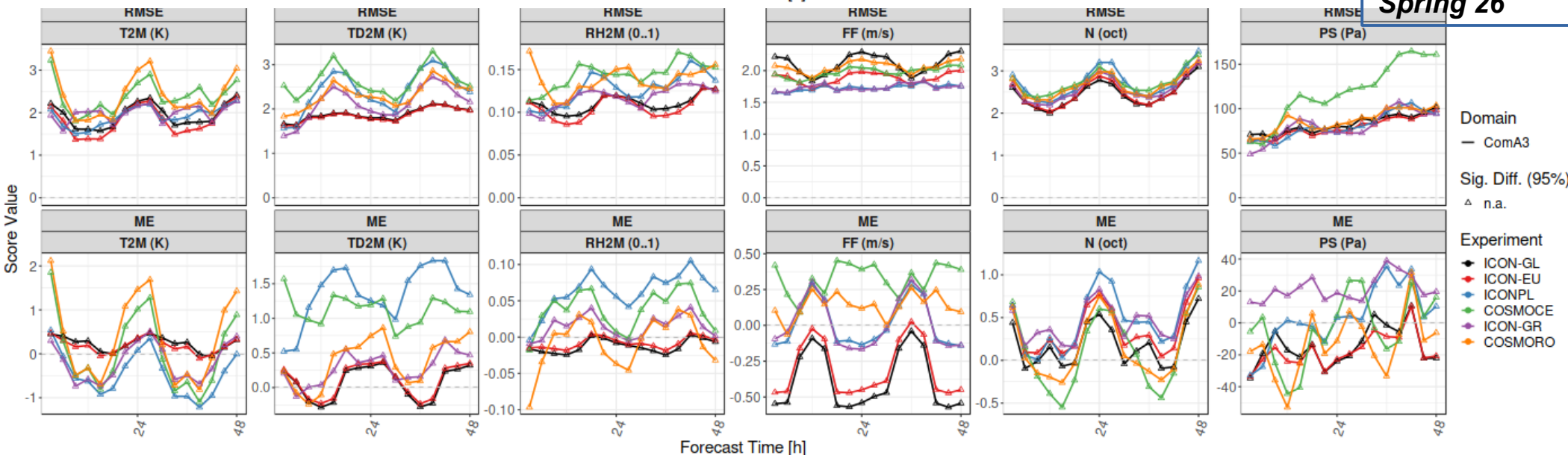
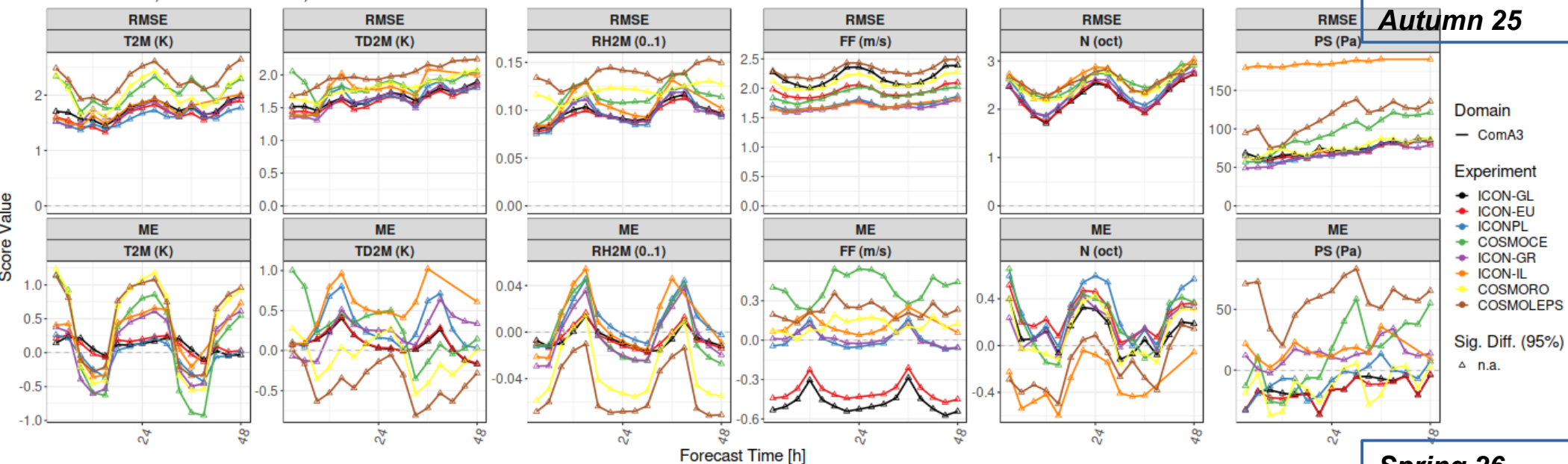
Summer 25



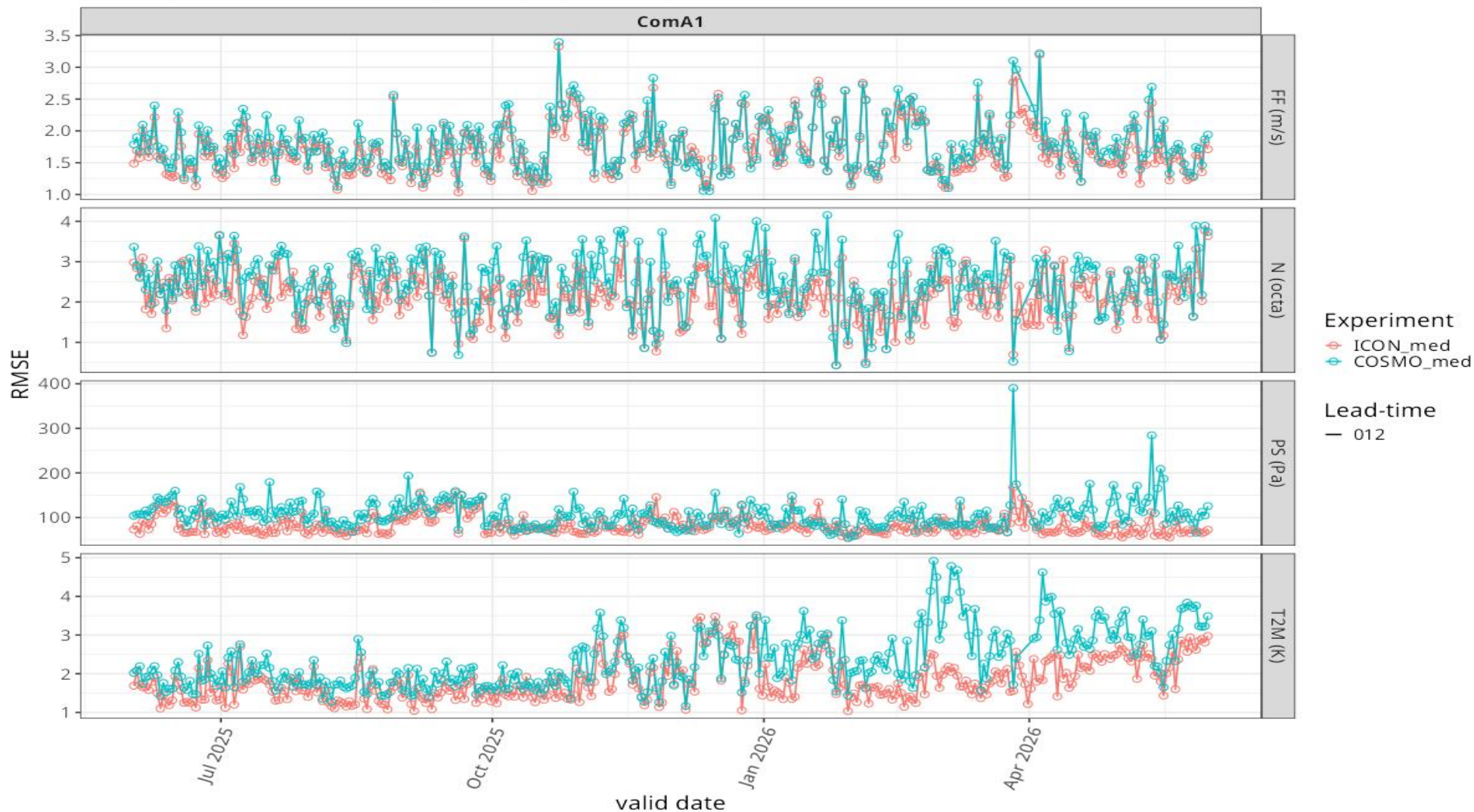
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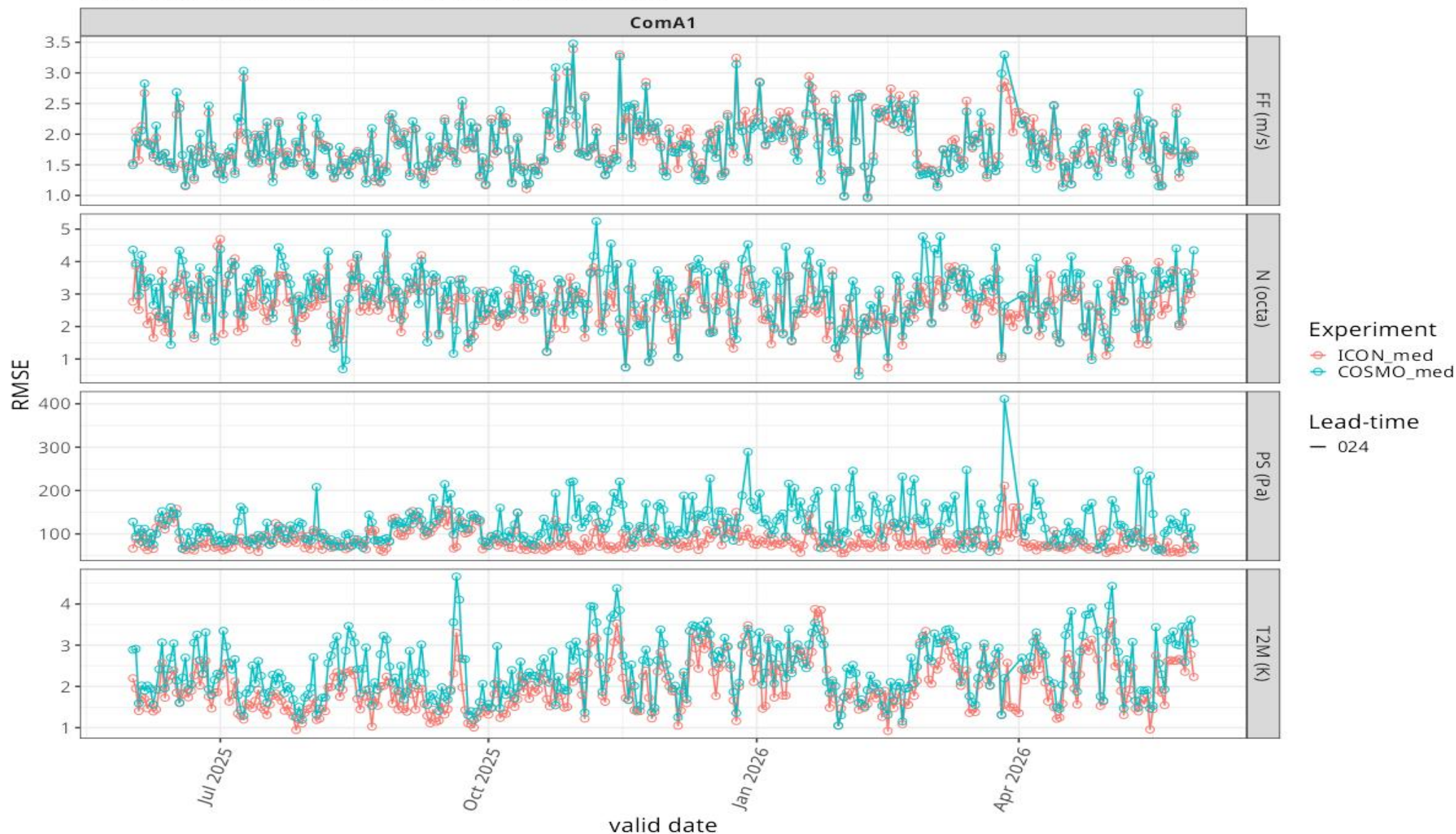
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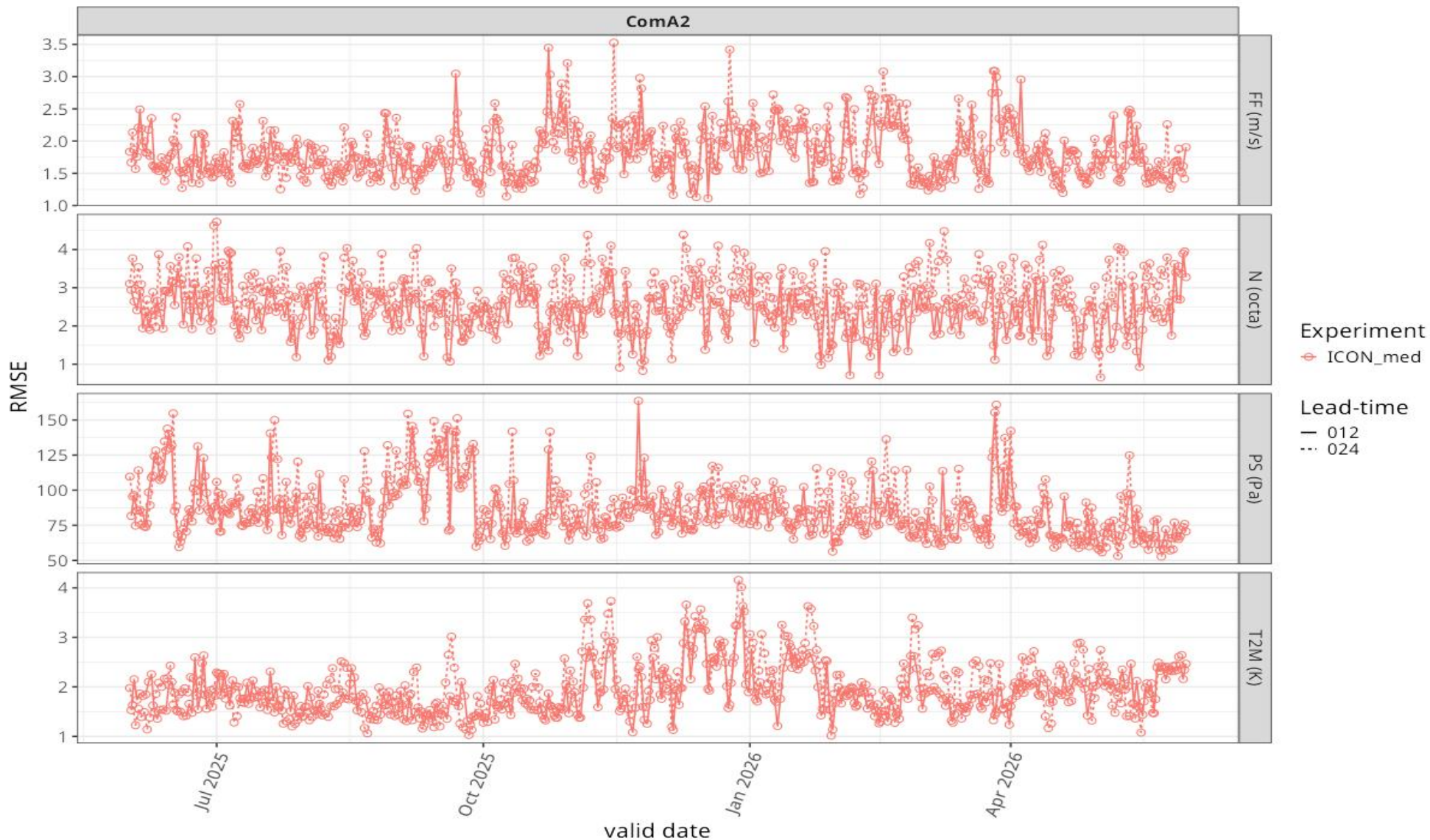
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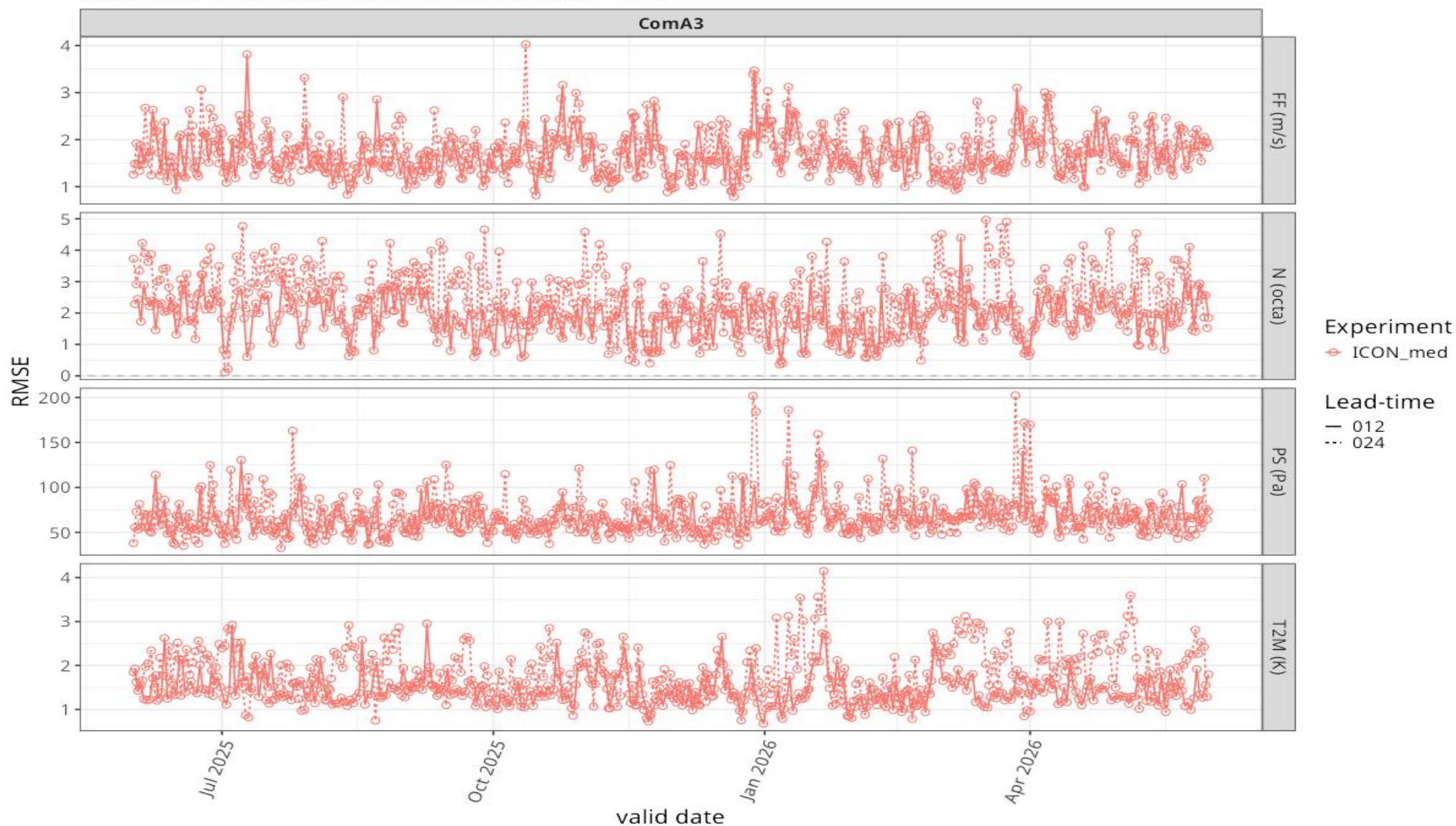
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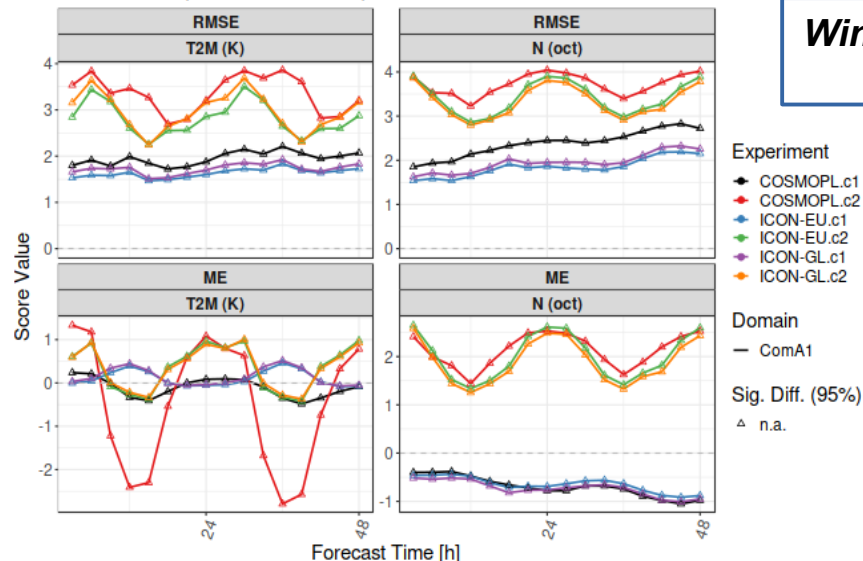
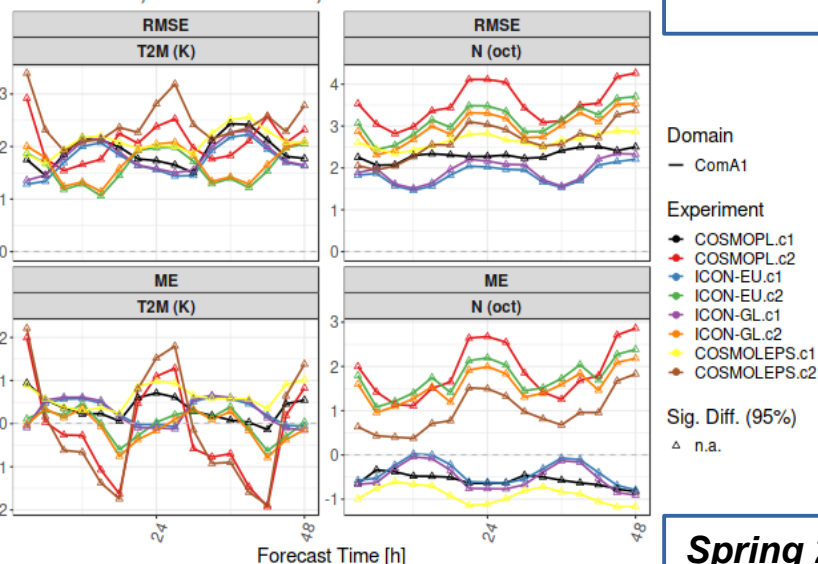


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Winter 25/26

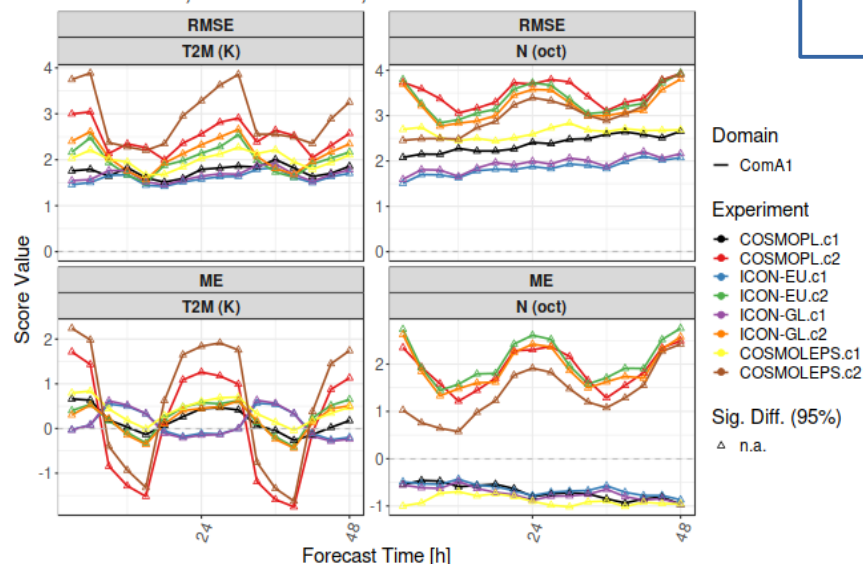
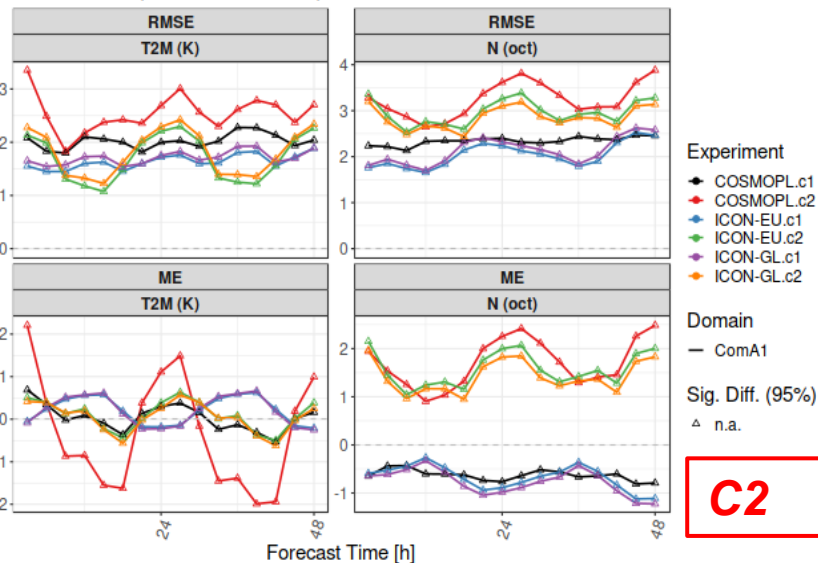


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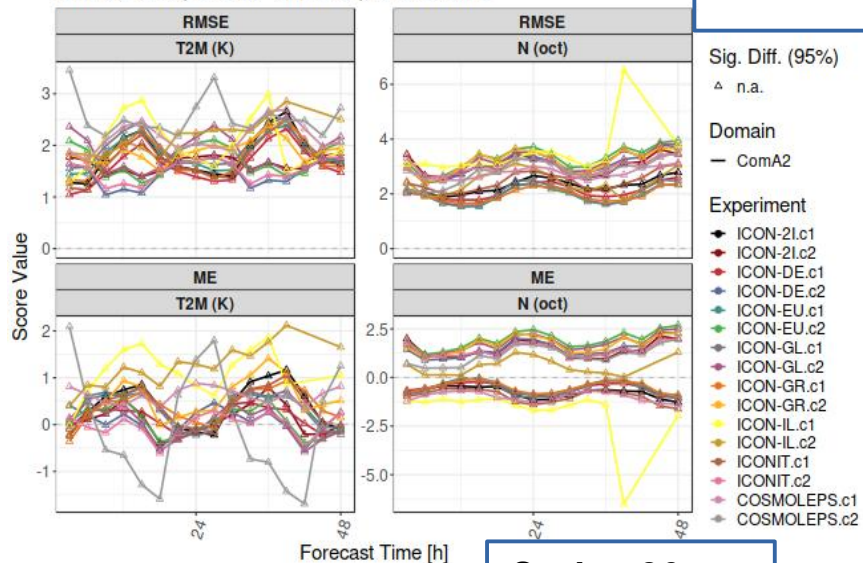
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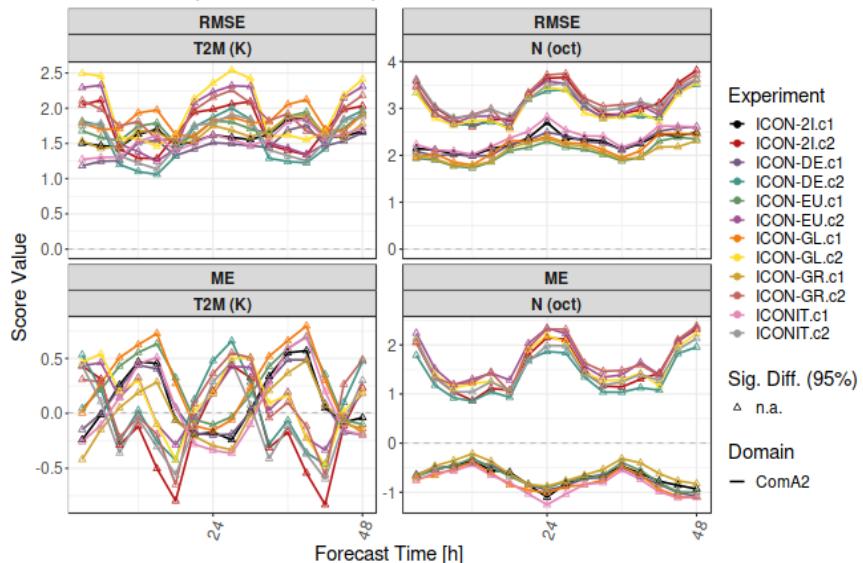
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Summer 25



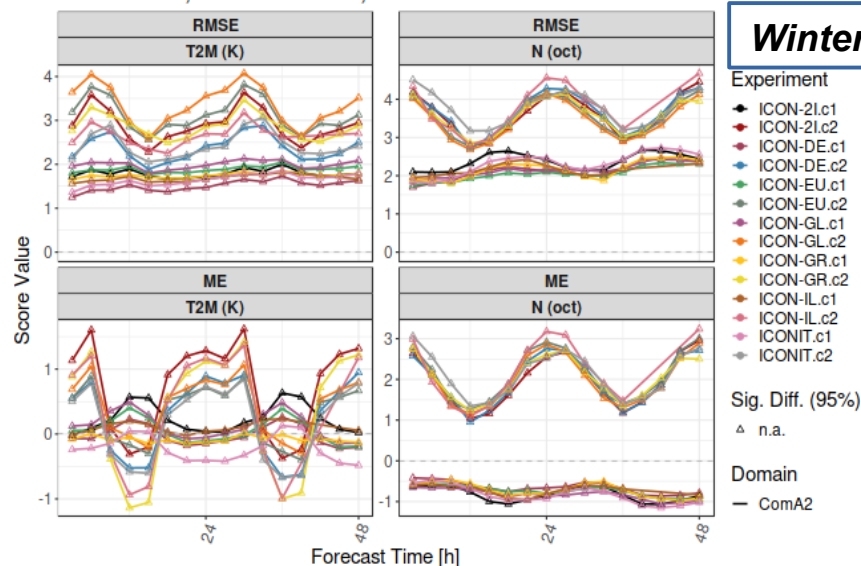
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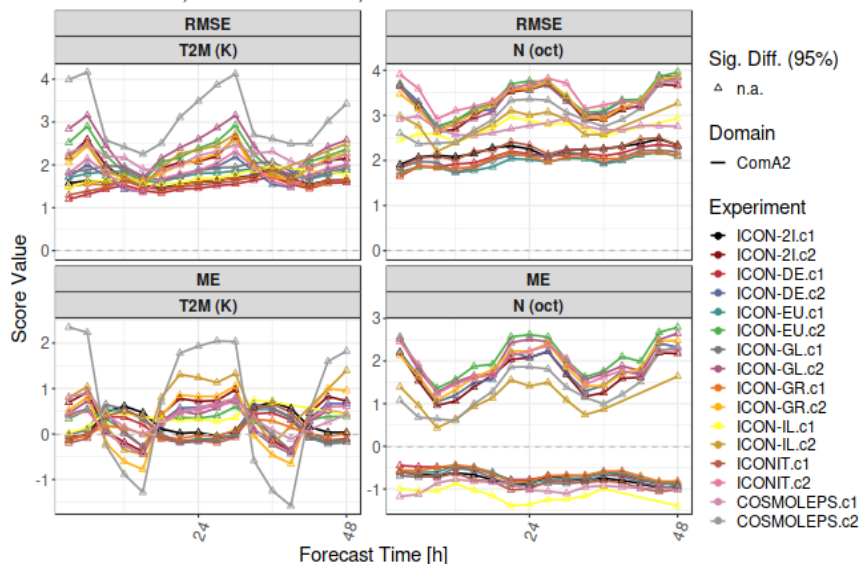
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Winter 25/26



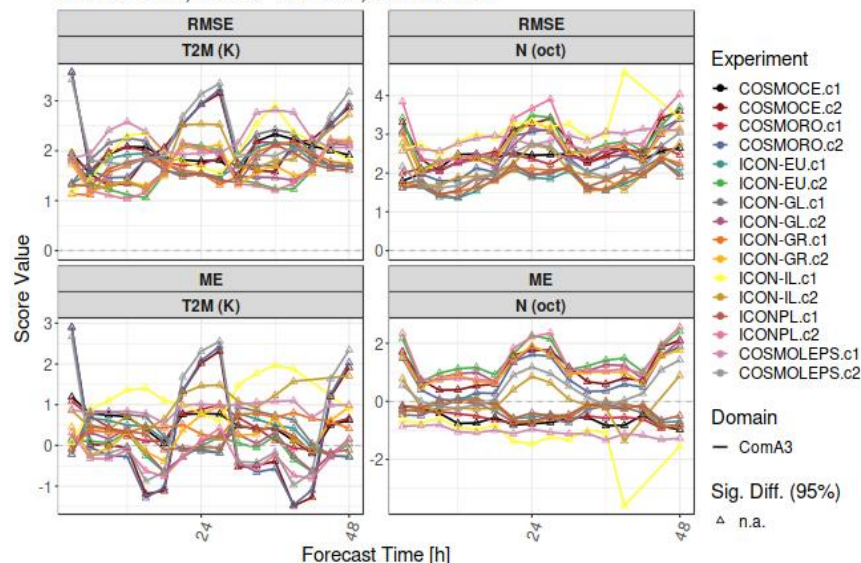
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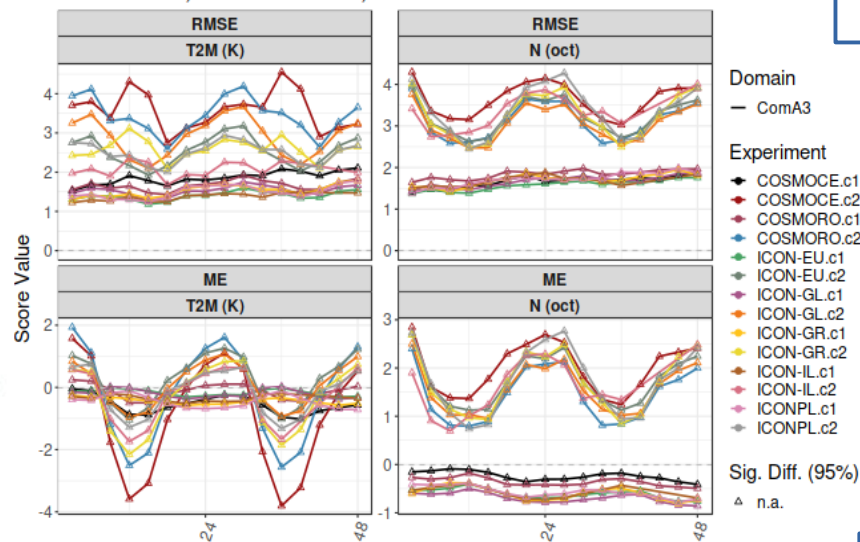


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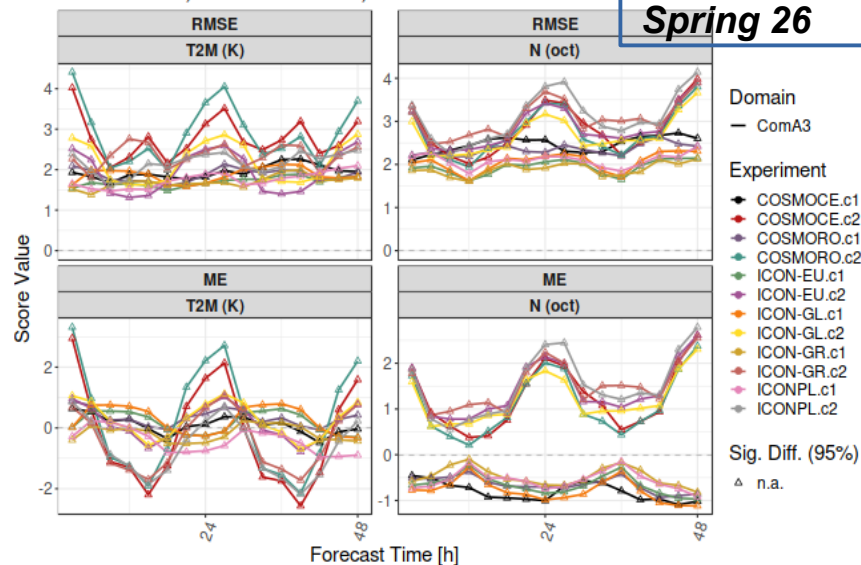
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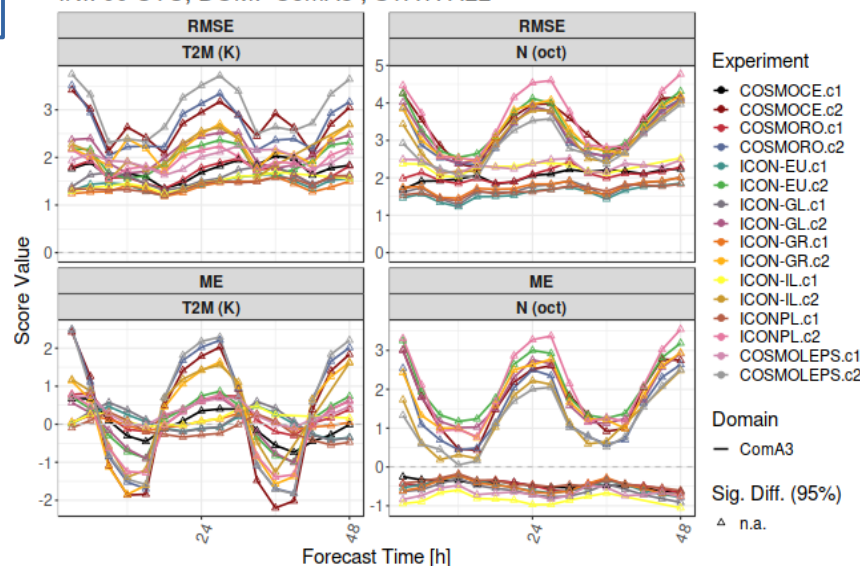
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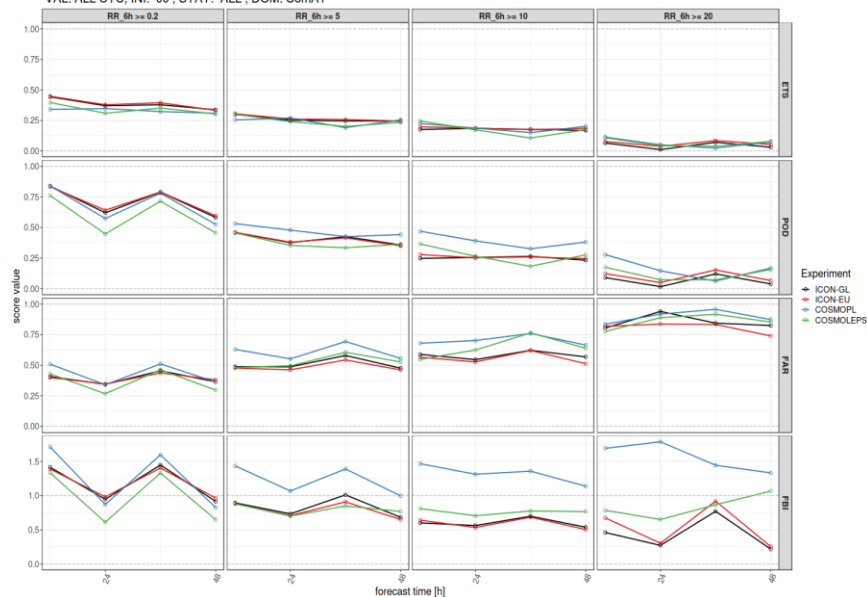
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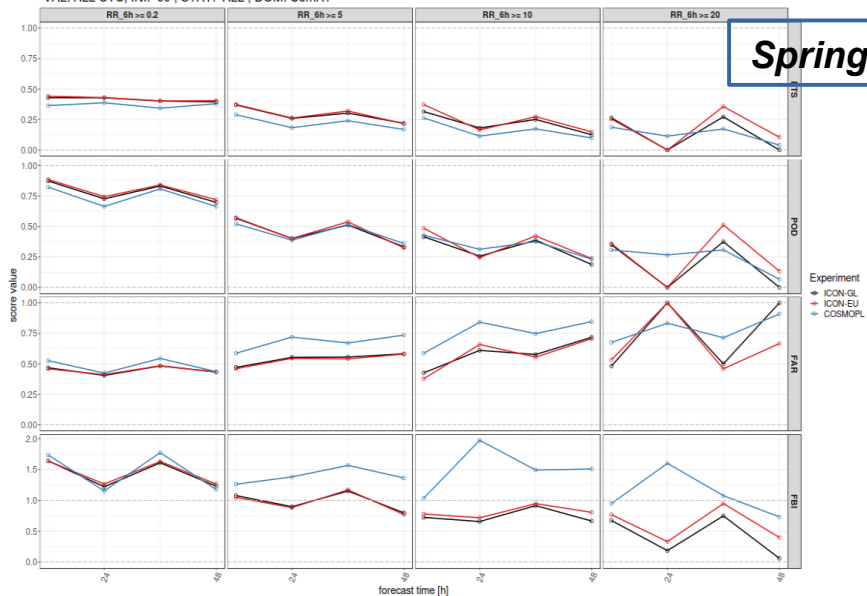
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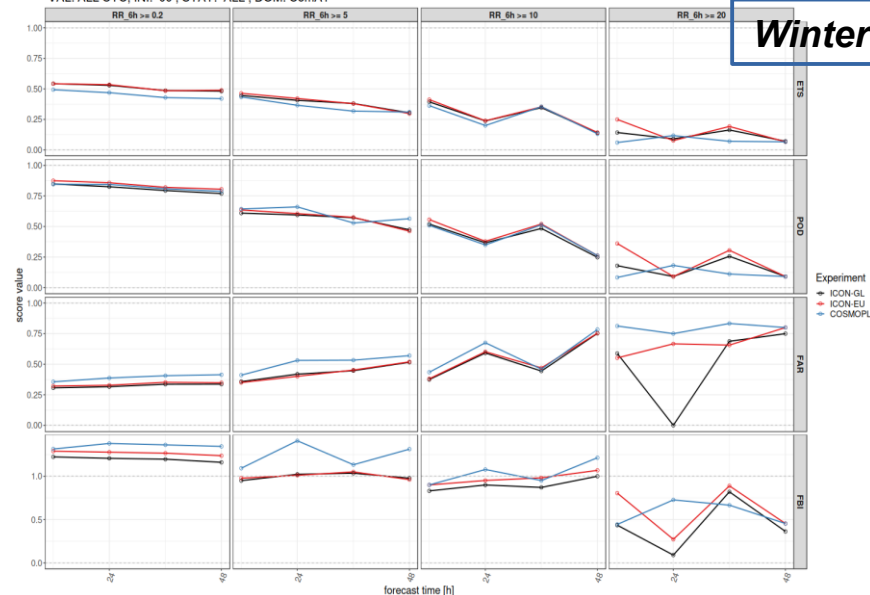


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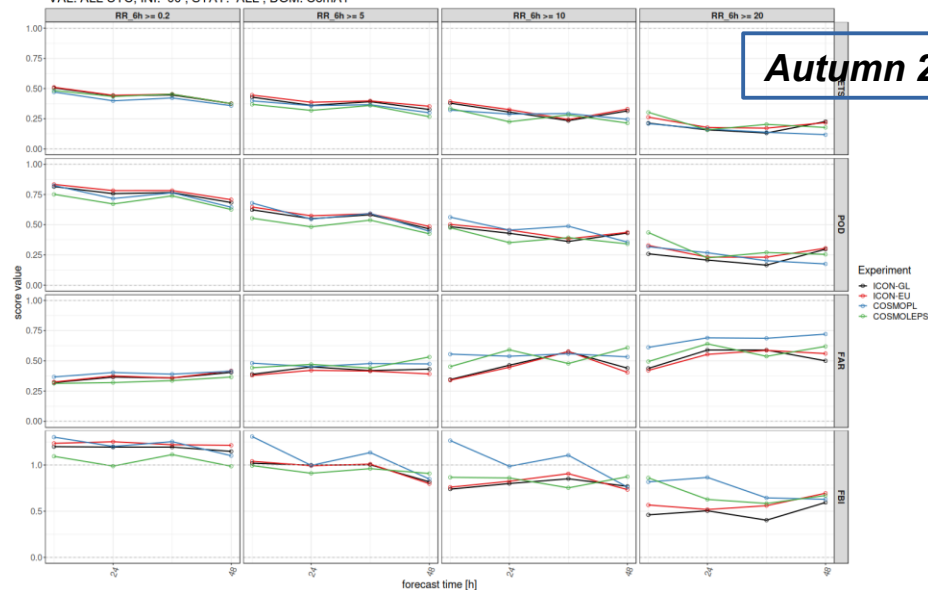
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Winter 25/26

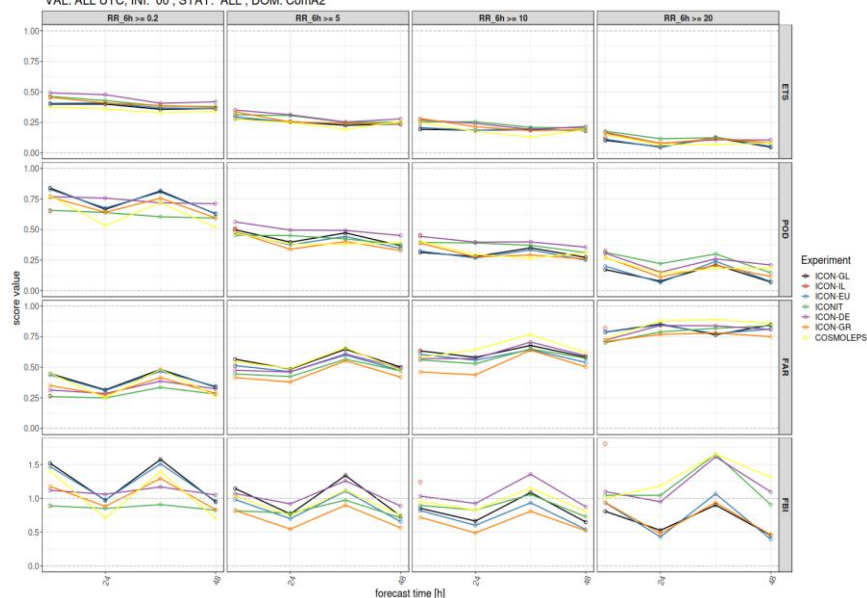
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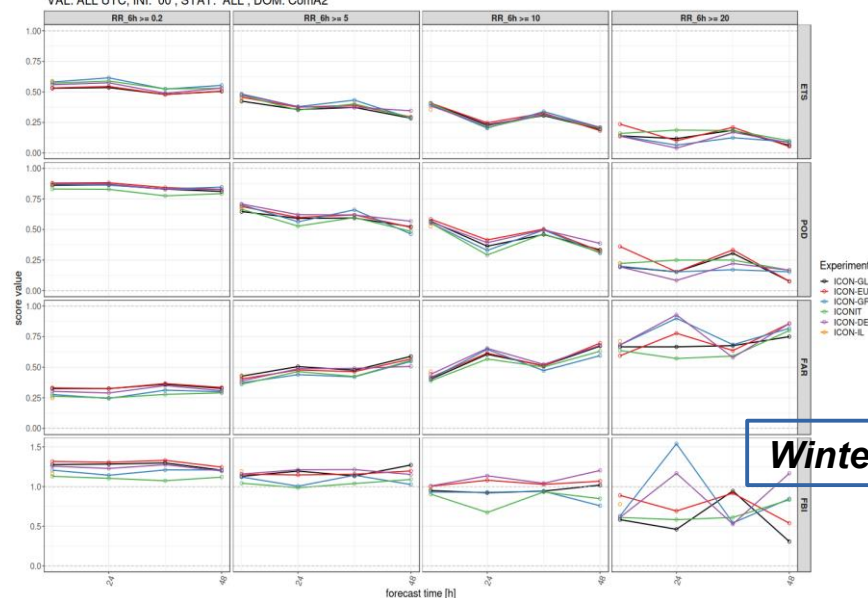
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Summer 25

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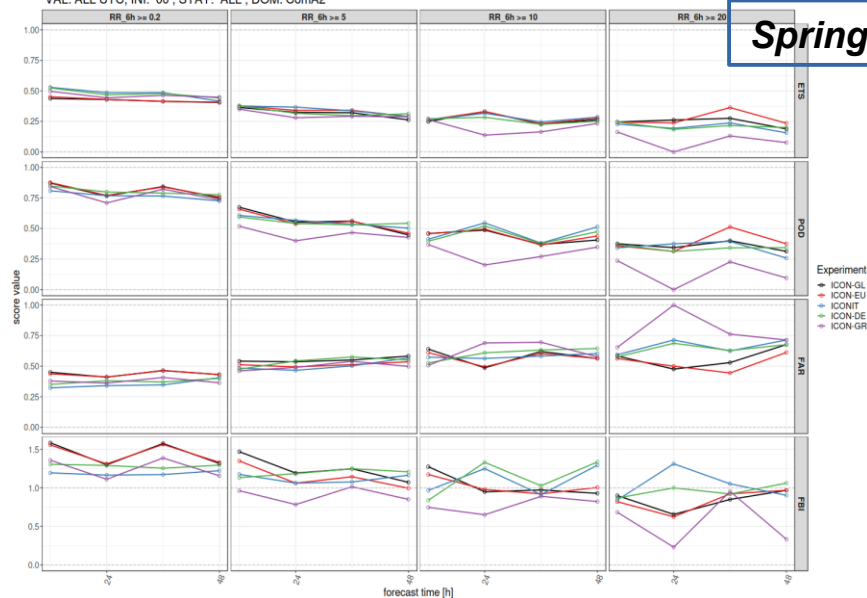


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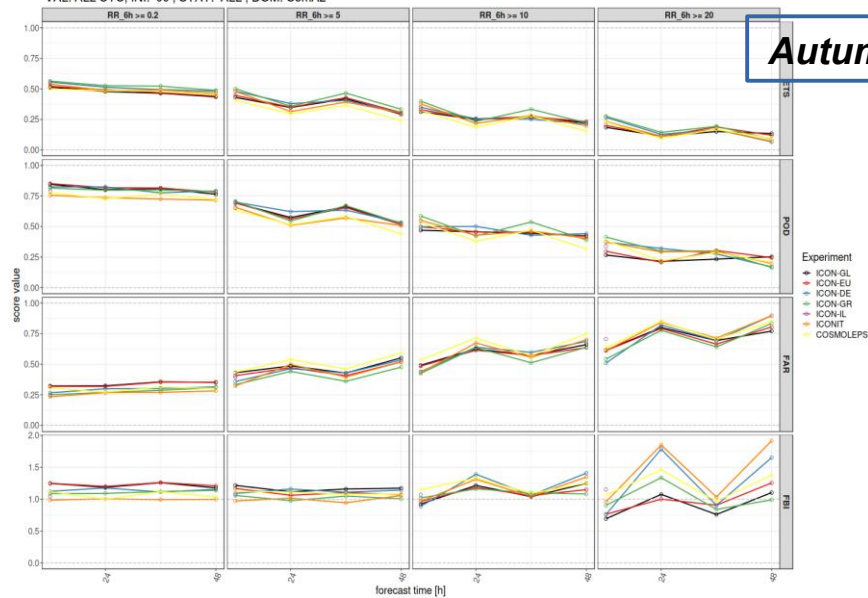
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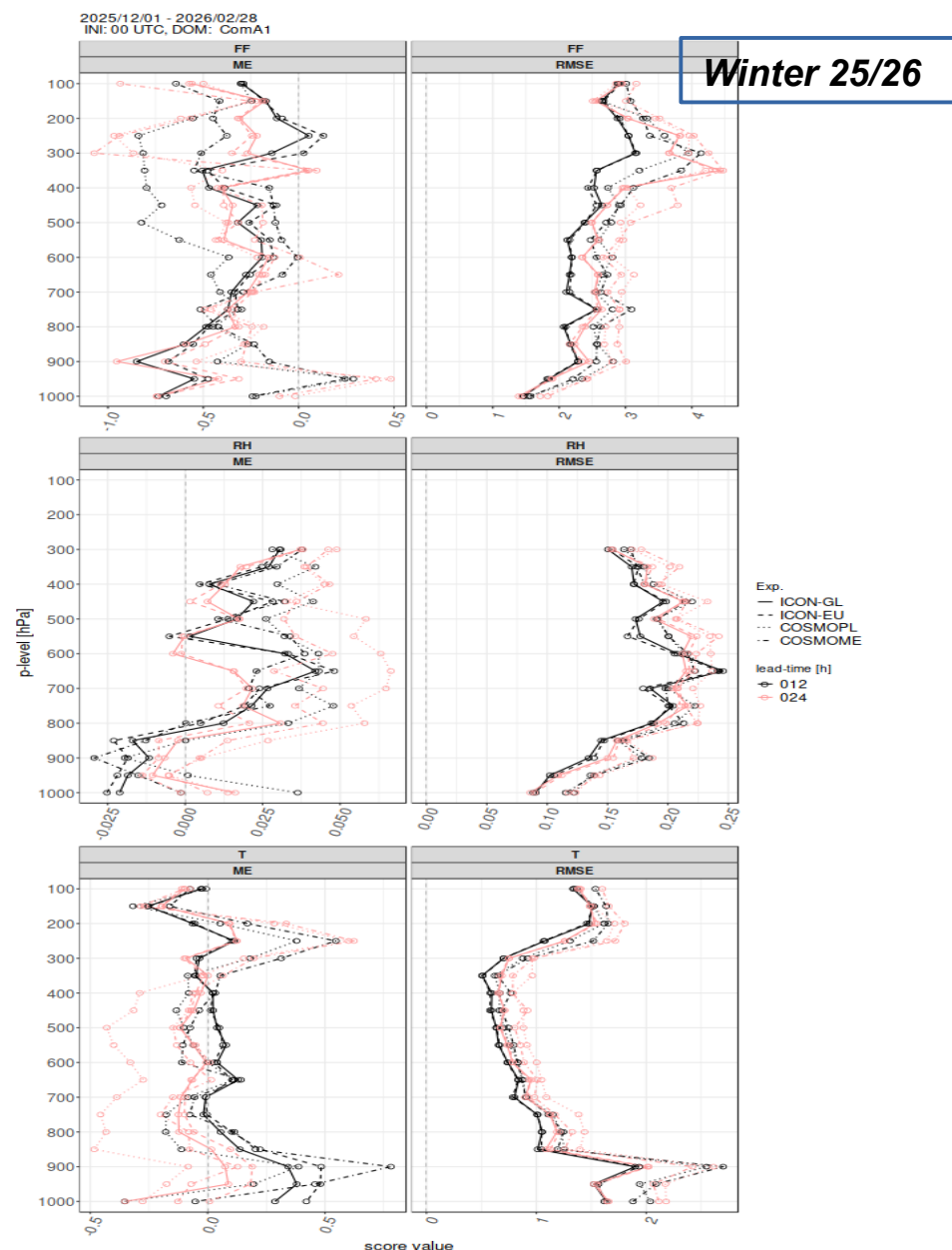
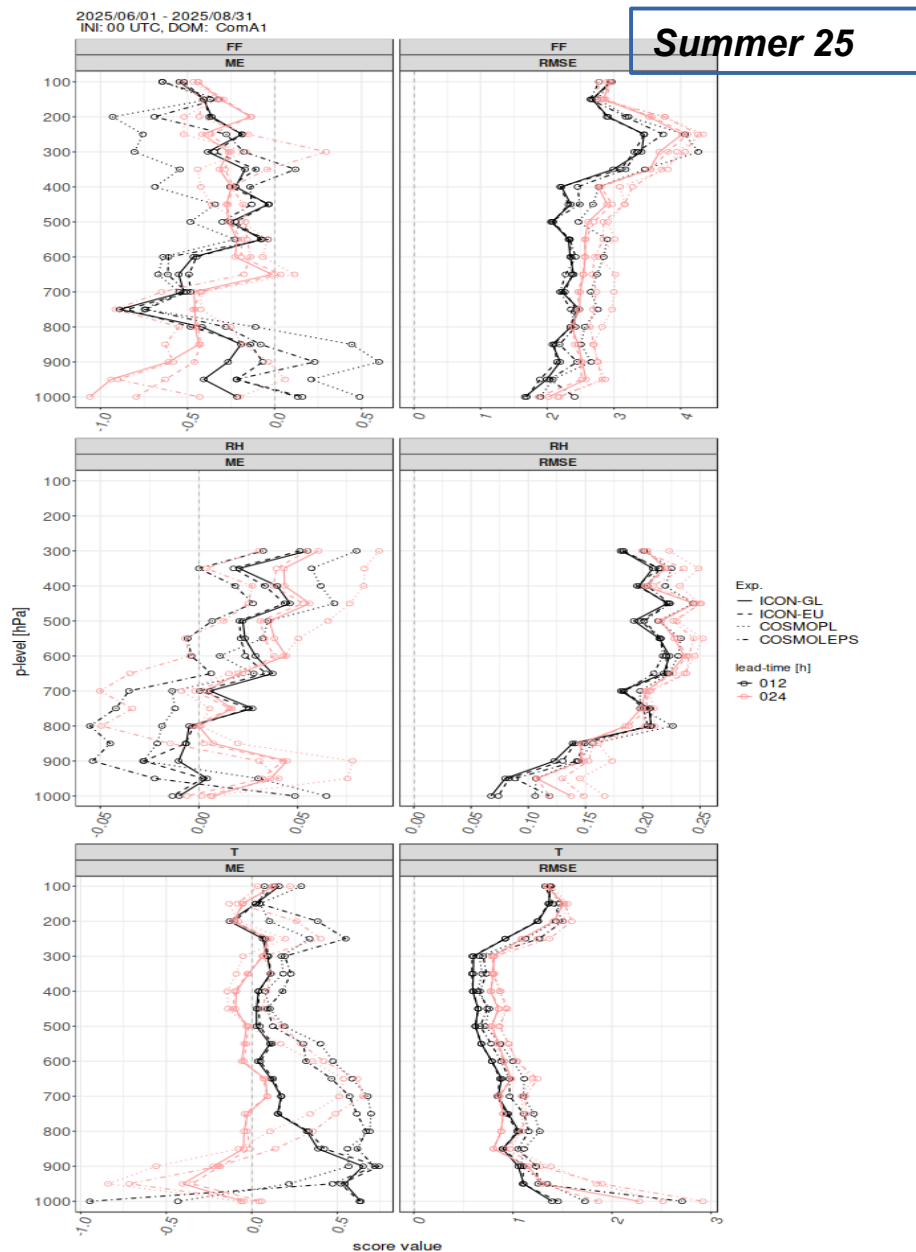


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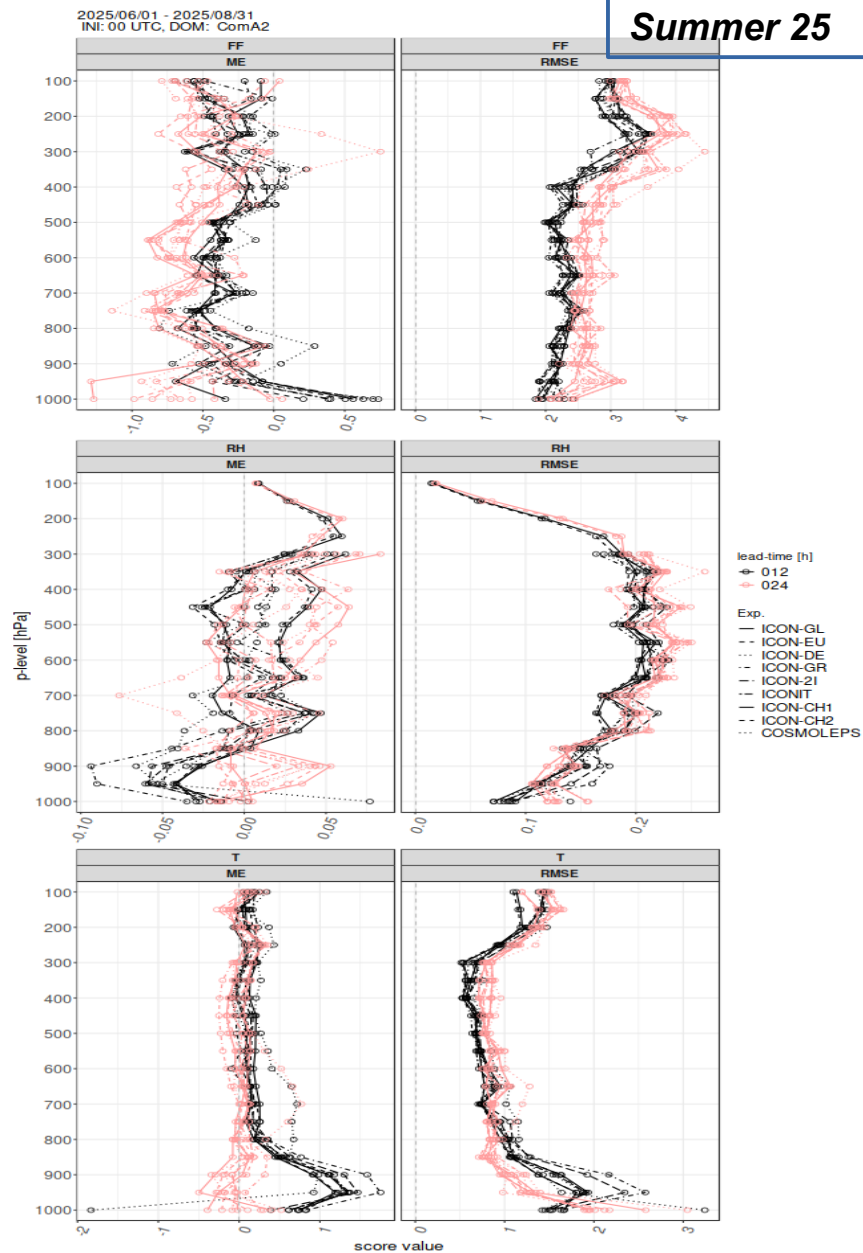
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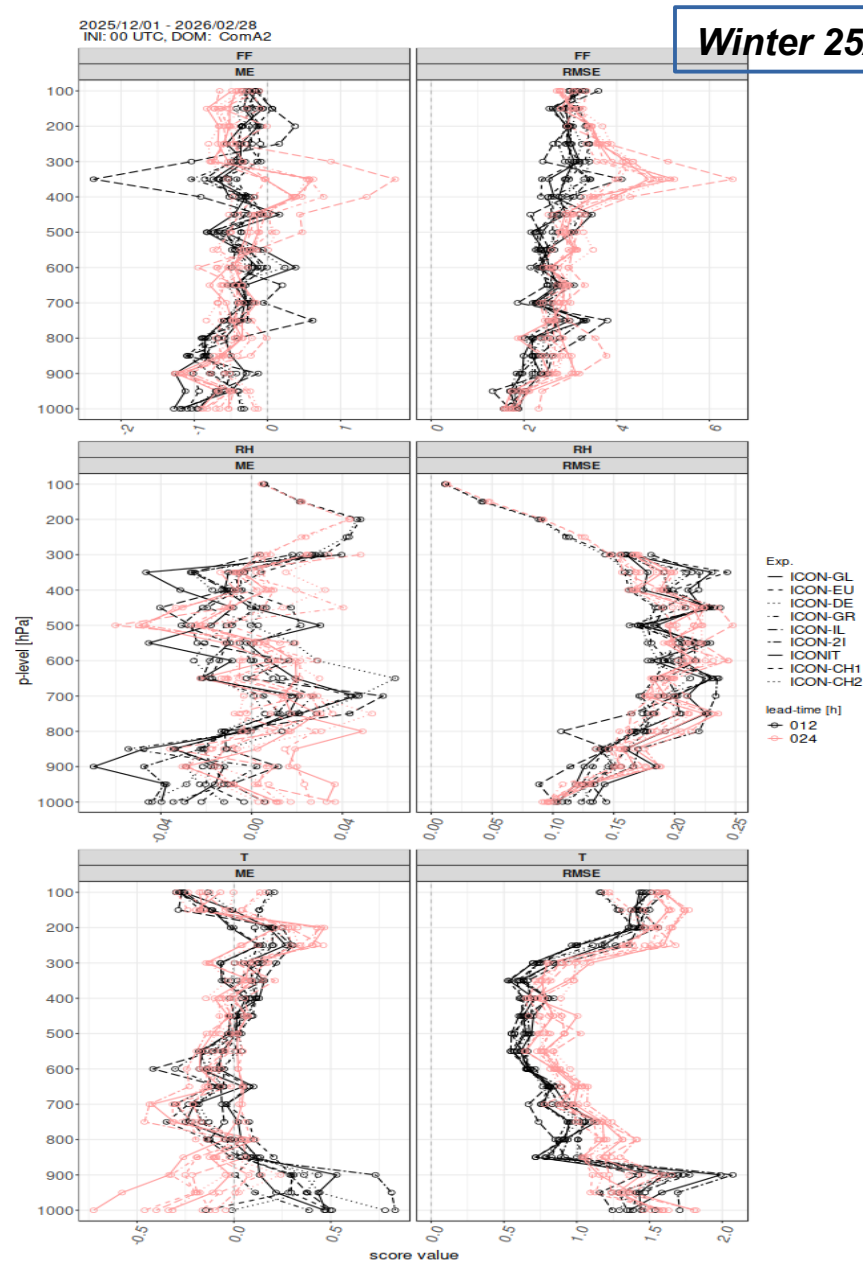
Autumn 25

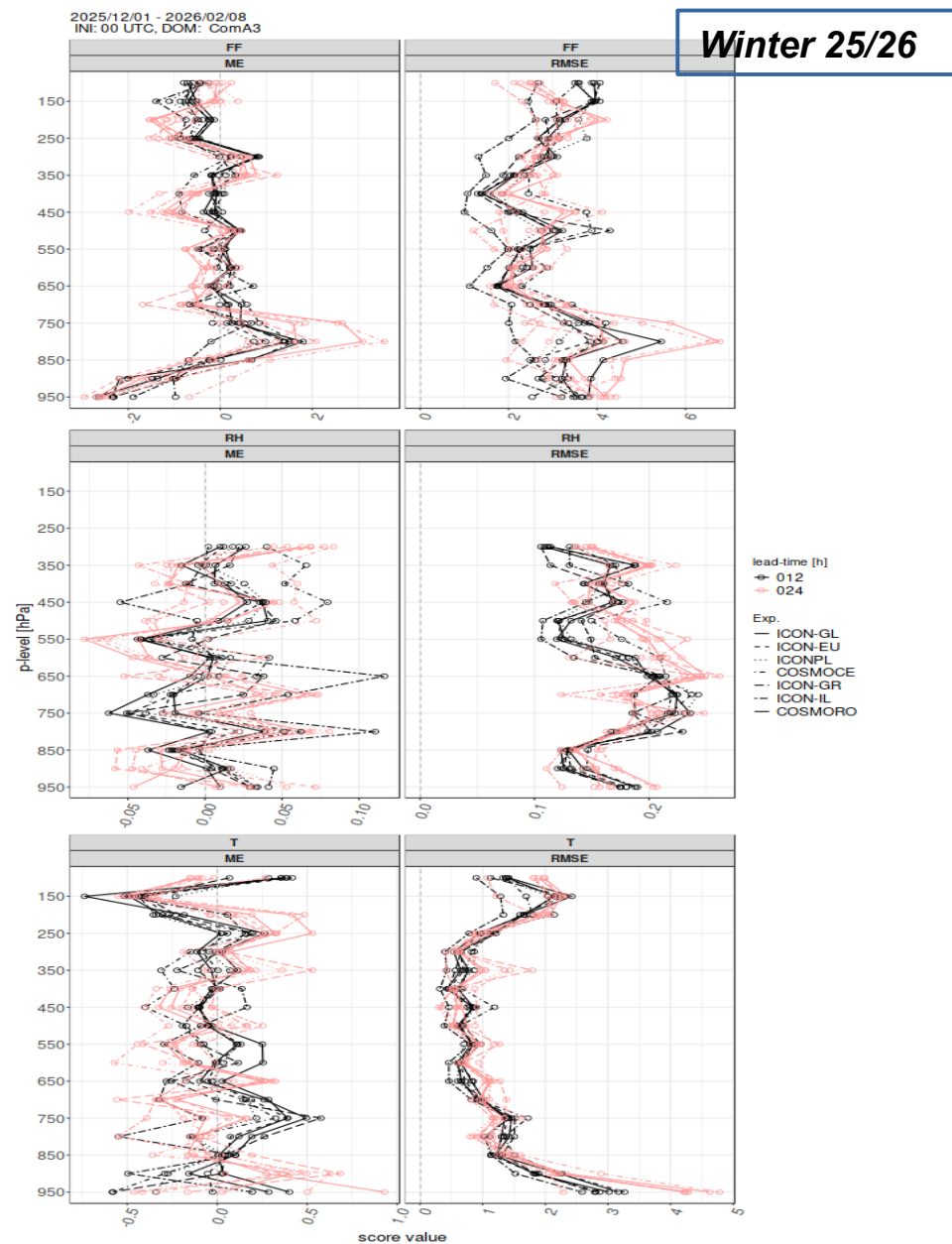
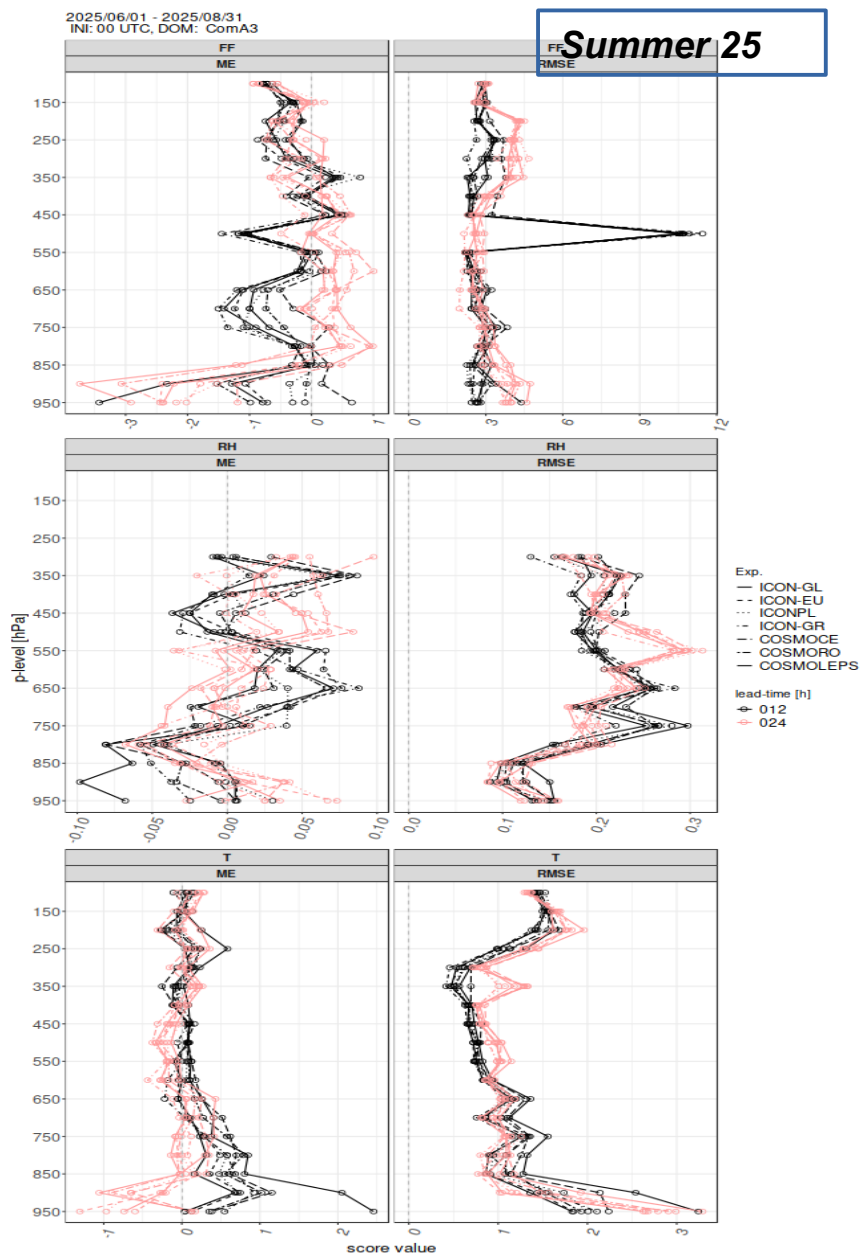


Summer 25



Winter 25/26





- Data availability:
 - JJA25: *DWD* and *MCH*
 - Starting from SON25 also *COSMOPL2K8TLE*
 - **Good starting point**
 - **Intent:** *include the EPS in the CP activity on a regular basis for 2026/2027*

- To be designed by the end of SON26.
- No major changes in structure and requirements expected.
- **Pending Issues:**
 - A slight **revision of score file naming convention** is necessary, as they have become complicated due to the number of models involved
 - Include **the EPS activity** on a regular basis
 - can provide additional insights
 - **Update** the status of the models used for verification.
 - Dependent on **changes to FFV2** (migration from “qs” to “qs2”)

- Early preparation of plots allows for a timely analysis
- ***CP analysis requires further attention to identify systematic errors***
 - Model tuning/calibration
 - High resolution runs
 - Updated model versions
 - Improved / new parameterizations
- **National domain** analysis is supplementary to CA analysis
- **Features** of MEC/FFV2 that can be tested
 - combined conditional verification
 - verification on surface characteristics
 - radiation verification

Verification Report: a short summary to be published as a Technical Report

- Data availability:
 - JJA25: *DWD* and *MCH*
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 - **Good starting point**
 - **Intent:** *include the EPS in the CP activity on a regular basis for 2026/2027*

AOB CP Activity

- ✓ **CP analysis** *requires further attention to identify systematic errors*
- ✓ *Thanks to T. Andreadis (HNMS) for help with the updates to the verification pages*
- ✓ **Thanks to everyone!**

Thank you to everyone for the support during this period
@ Flora & @ Christoph & @ Andrzej

Thank you for your attention!