

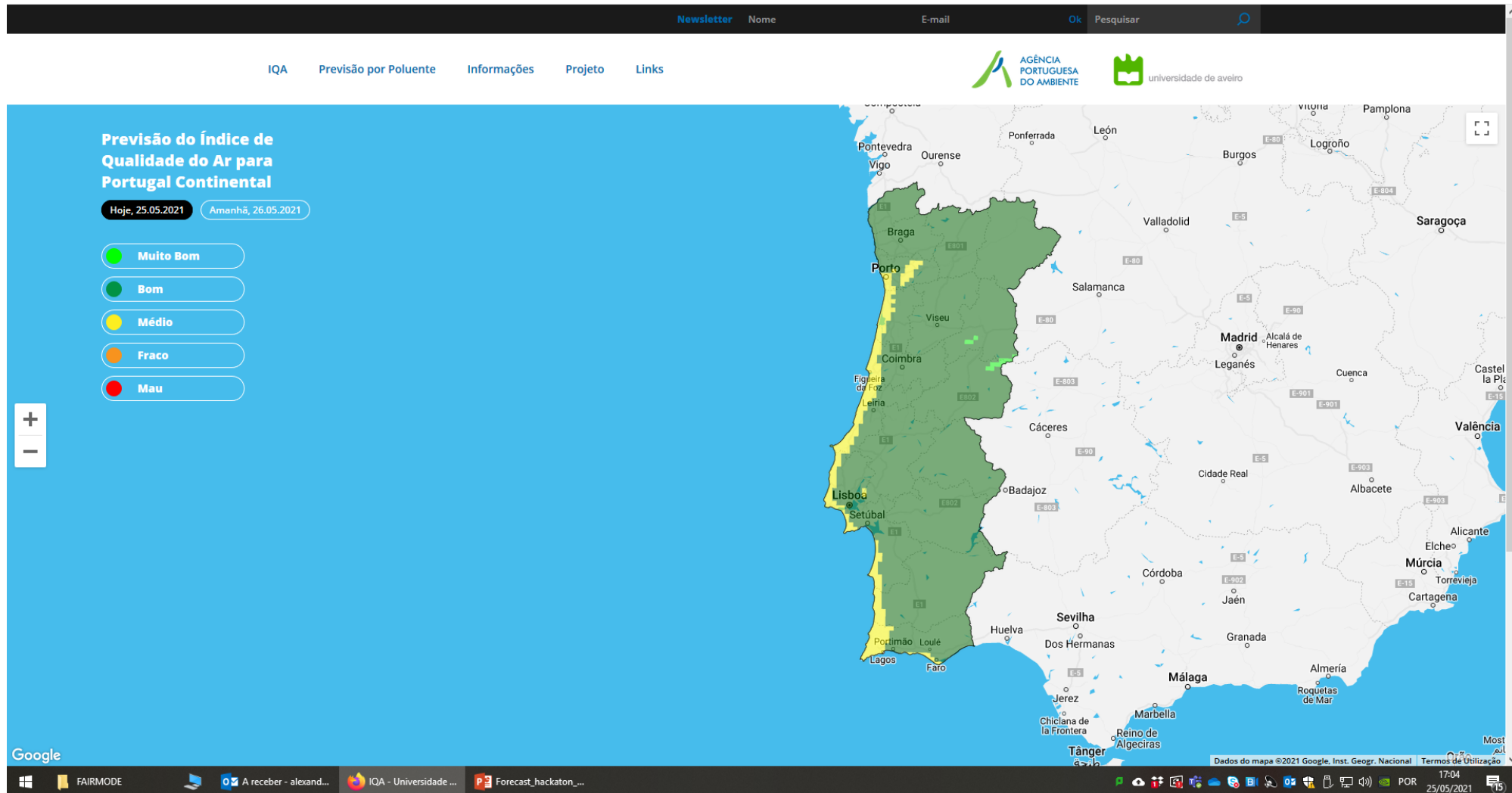
CT3 | Forecast DELTA Tool

Alexandra Monteiro | Carla Gama | Miguel Rosa
University of Aveiro

6 October 2021

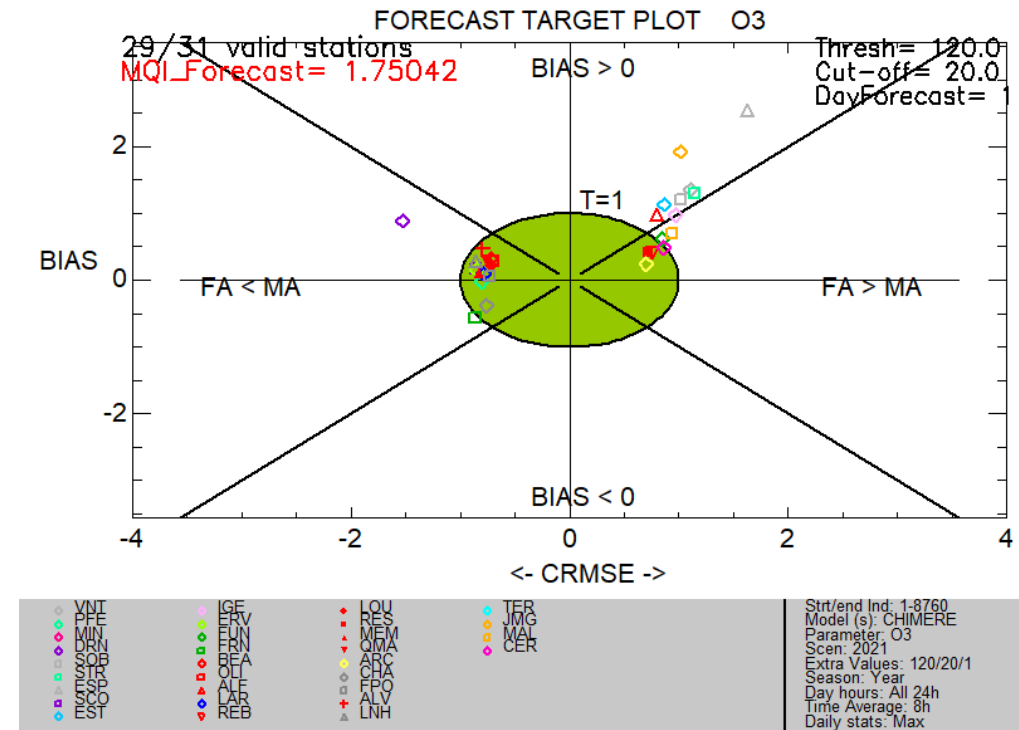
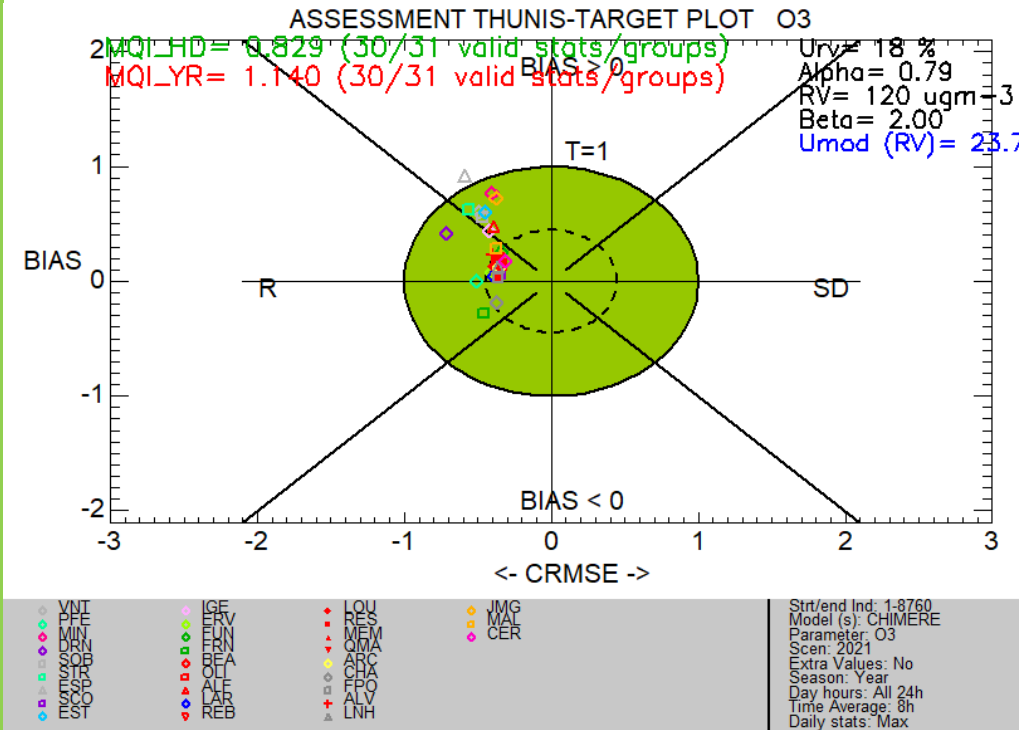
Our air quality forecast system

<http://previsao-qar.web.ua.pt/>

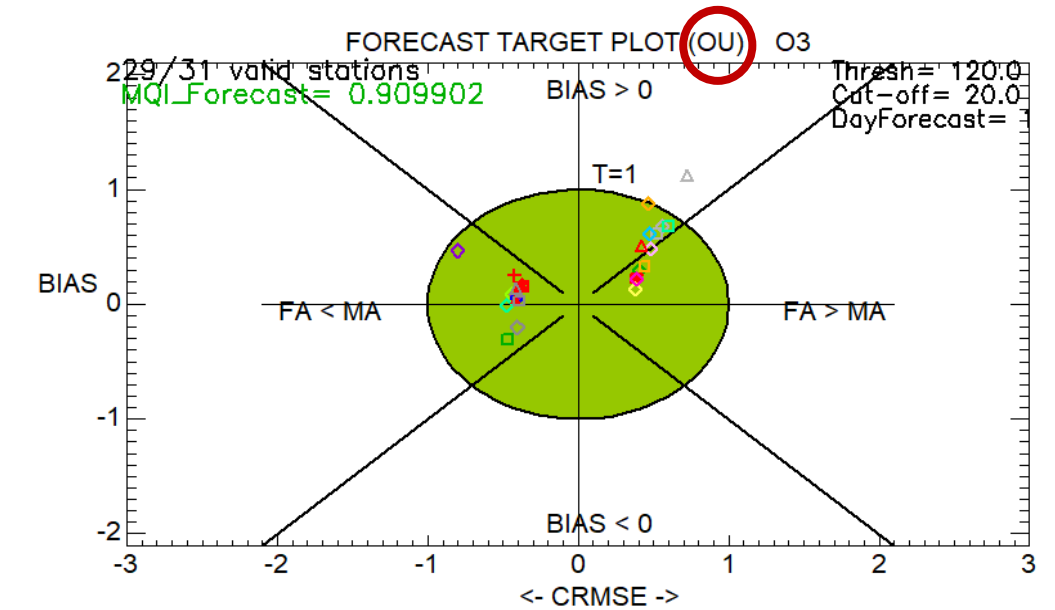
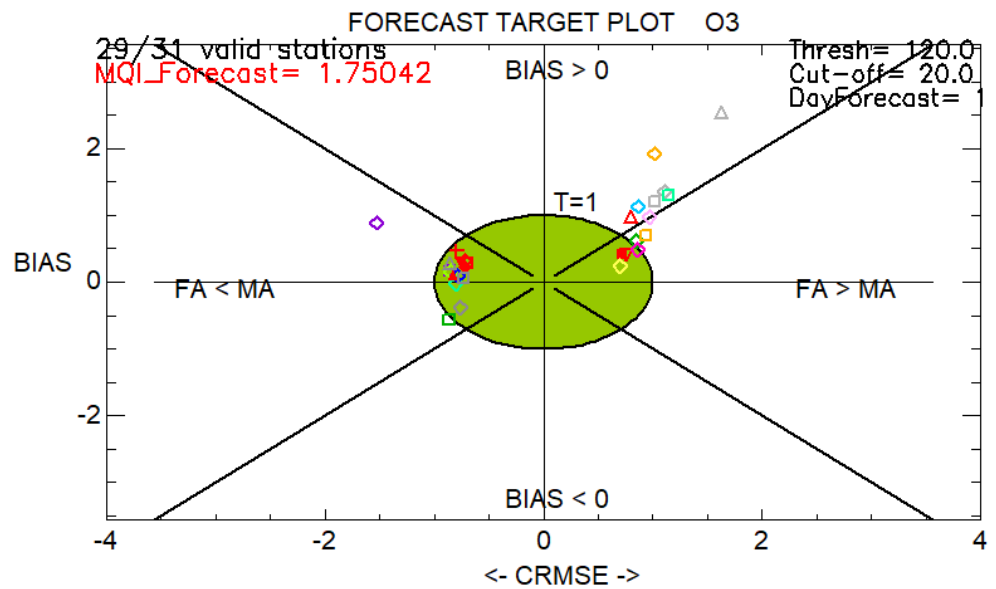


O₃

ASSESSMENT vs FORECAST

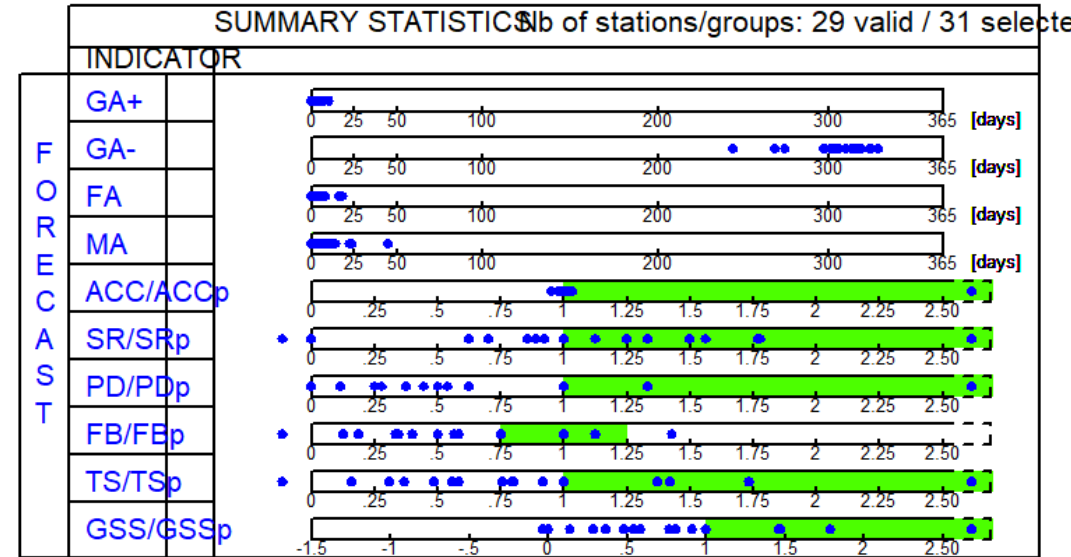
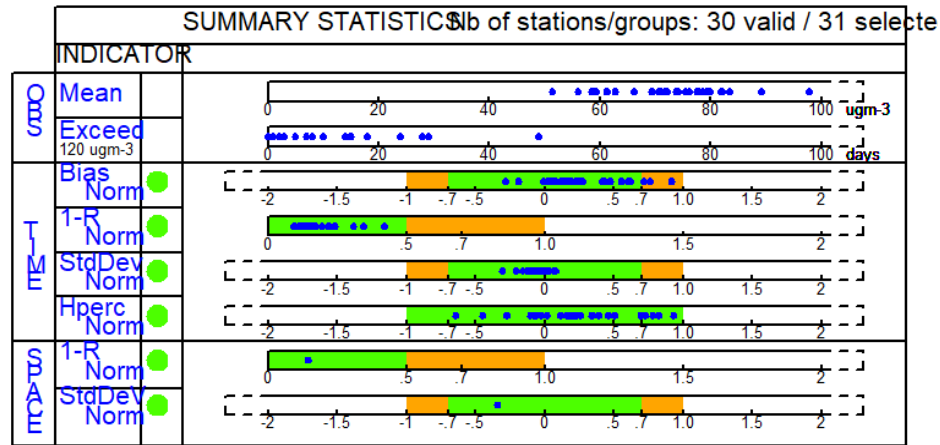


O₃



O₃

ASSESSMENT vs FORECAST

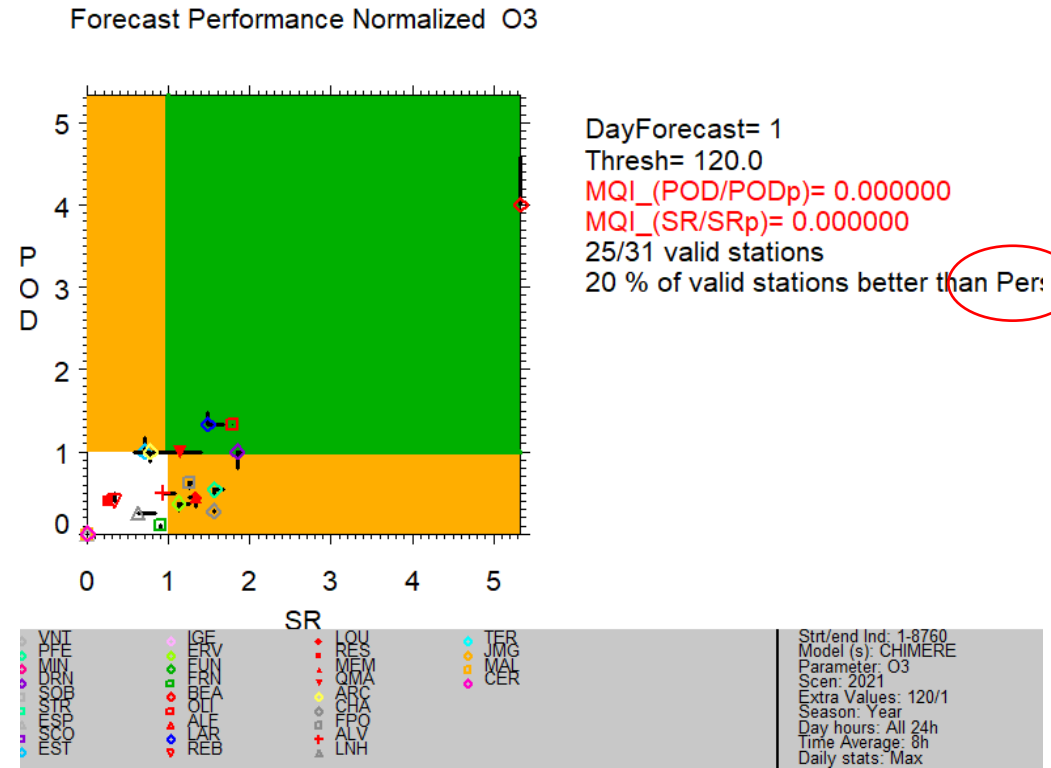
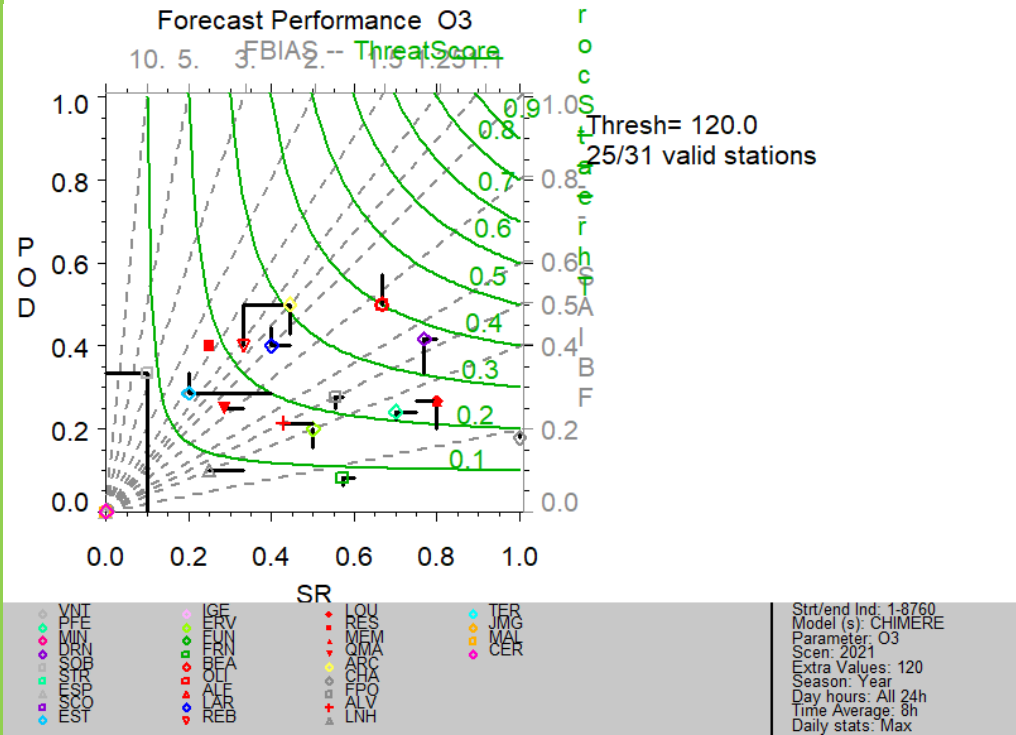


■ Performance Criteria satisfied
■ Performance Criteria satisfied; Error dominated by corresponding Indicator
● TIME: >90% of stations fulfills the Performance Criteria
 SPACE: Dot fulfills the Performance Criteria
● TIME: <90% of stations fulfills the Performance Criteria
 SPACE: Dot does not fulfill the Performance Criteria

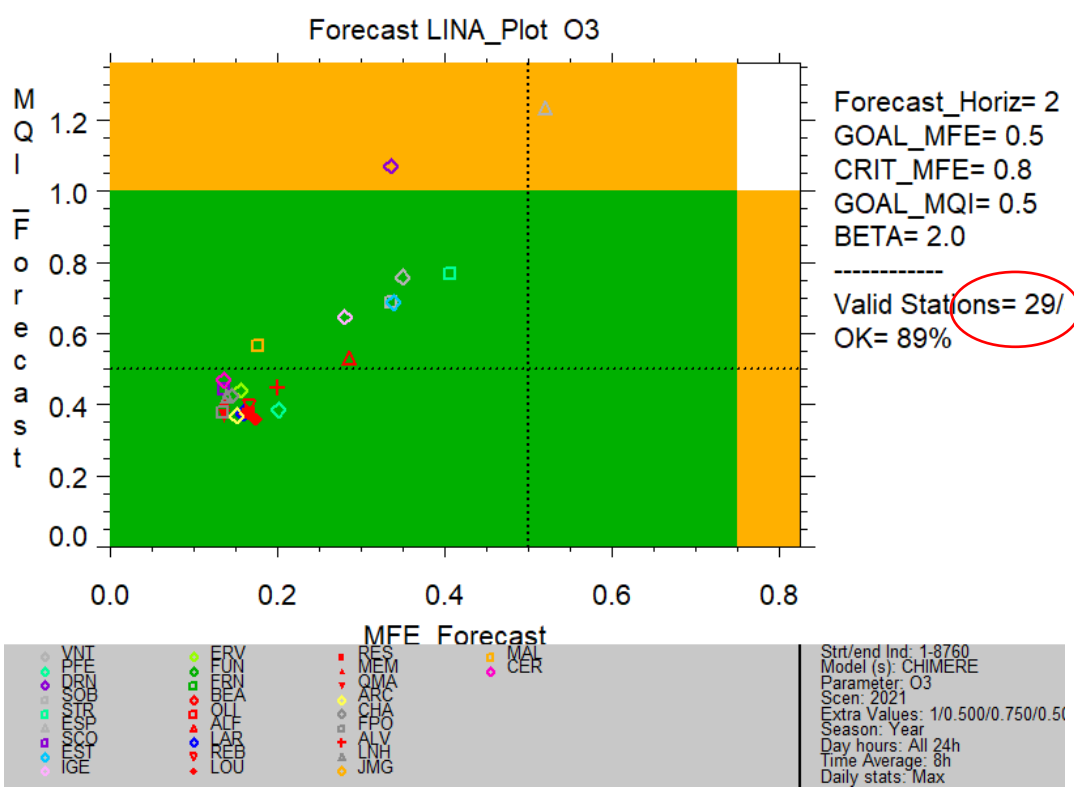


- Orange range?
- Performance classification
-

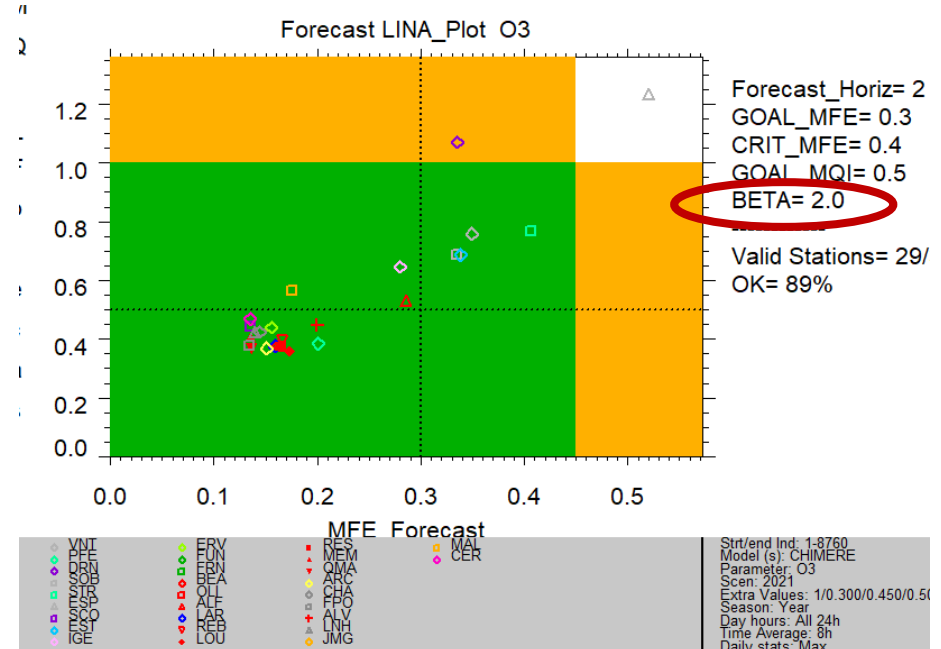
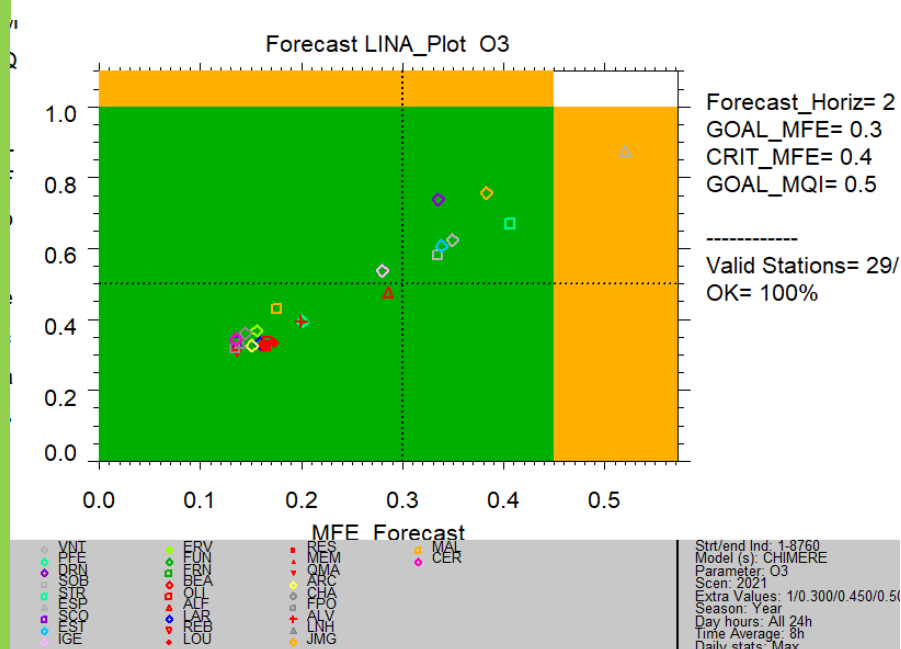
O₃



O₃

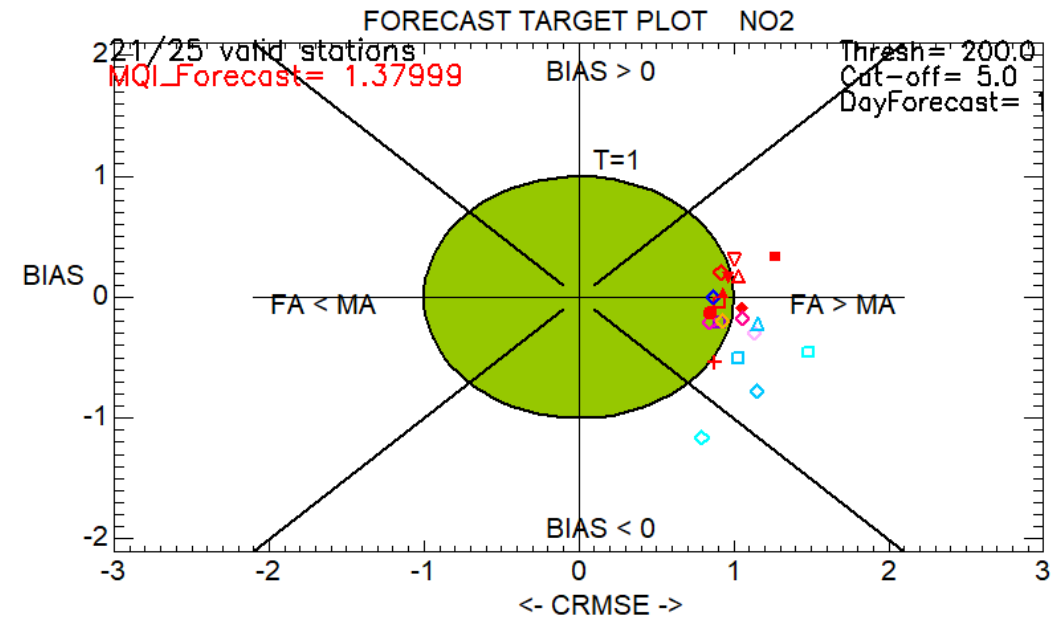
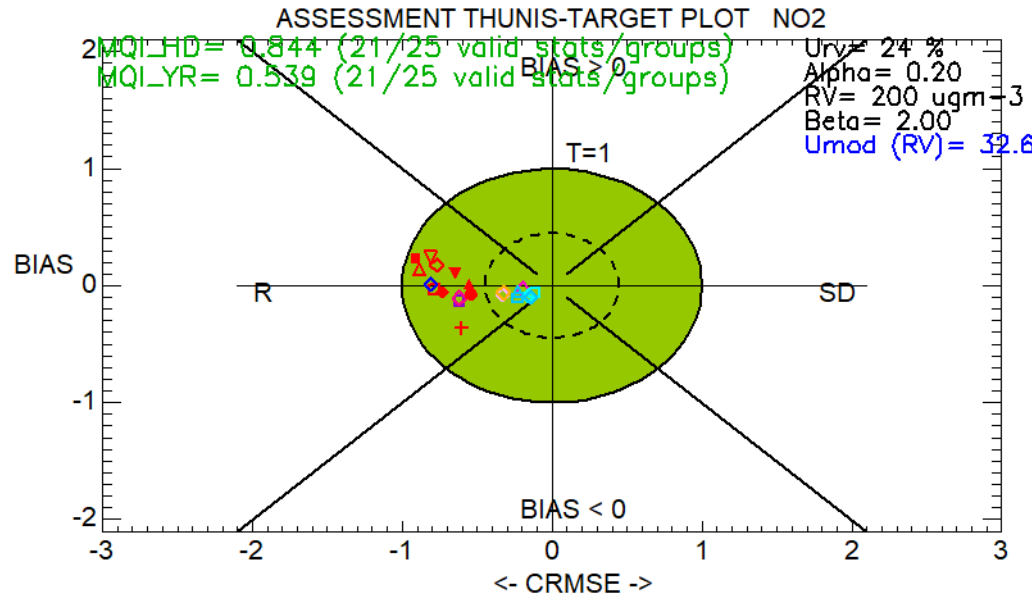


Why not also the % of valid stations better than persistence?



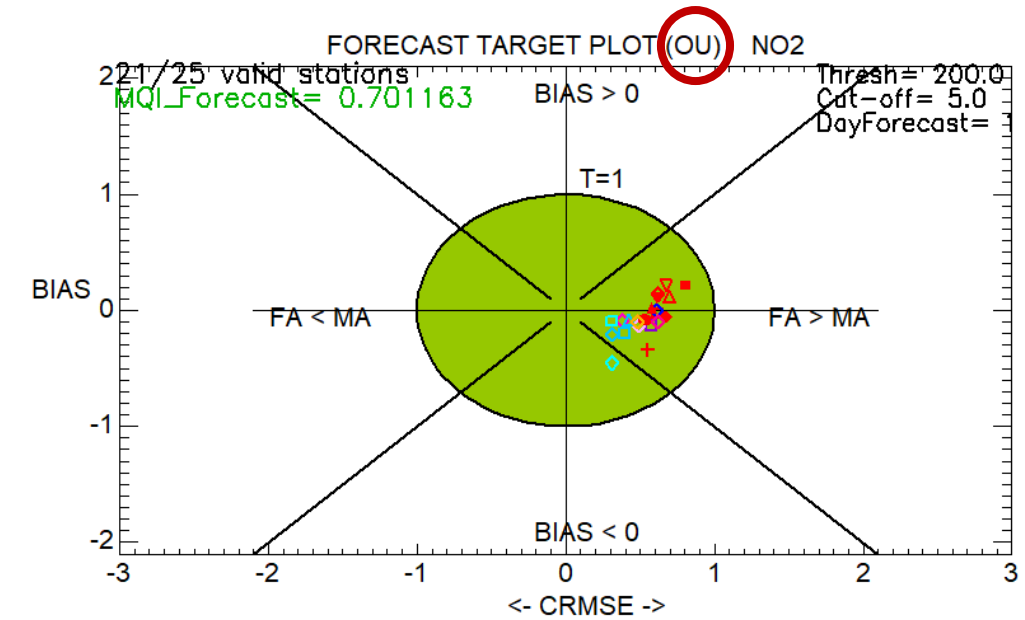
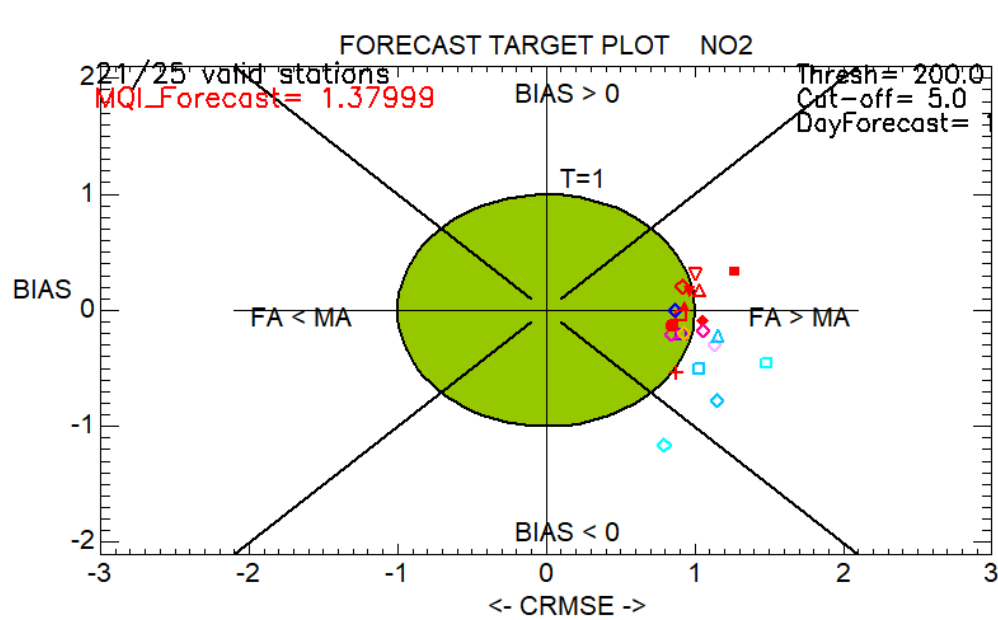
NO₂

ASSESSMENT vs FORECAST



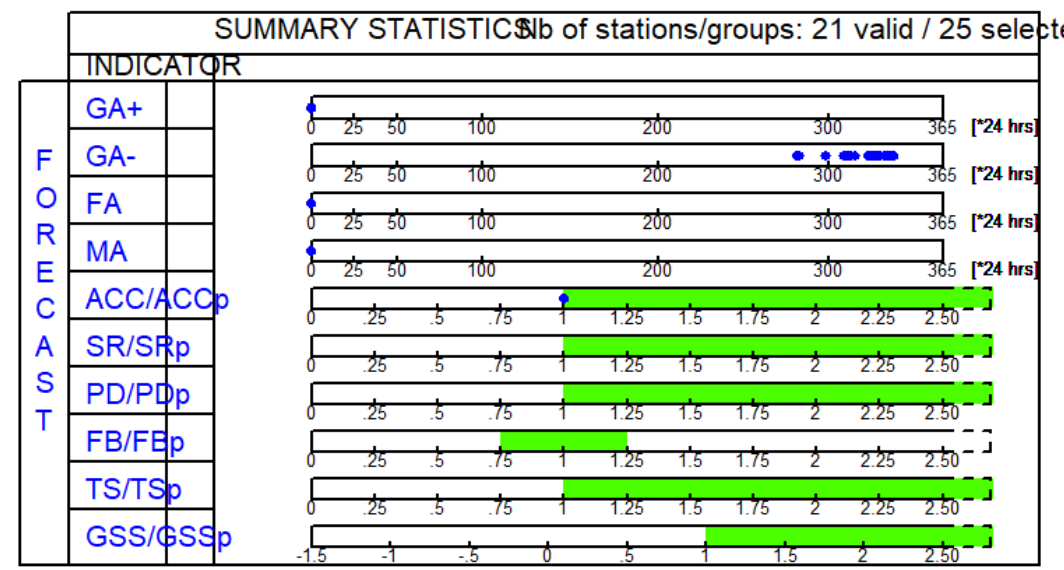
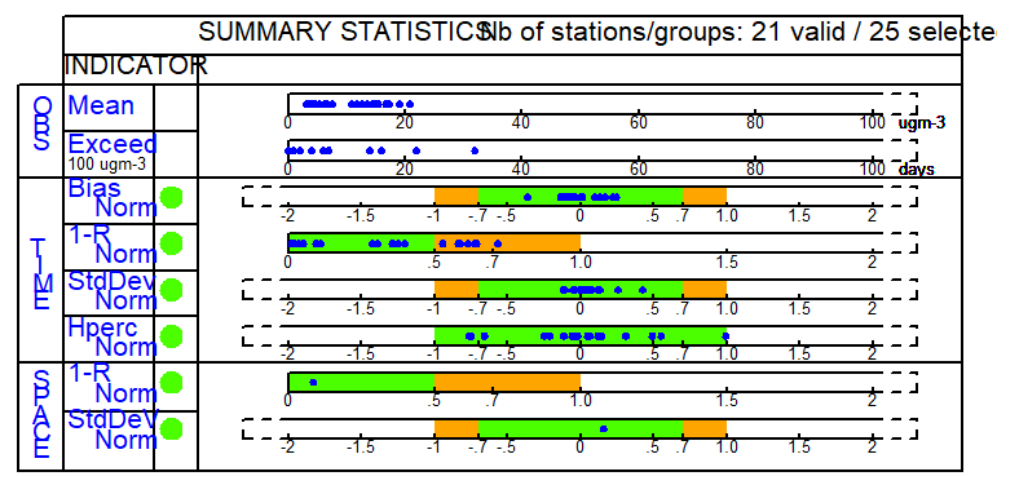
Daily Stats -> Preserve
We didn't test different forecast days!

NO₂



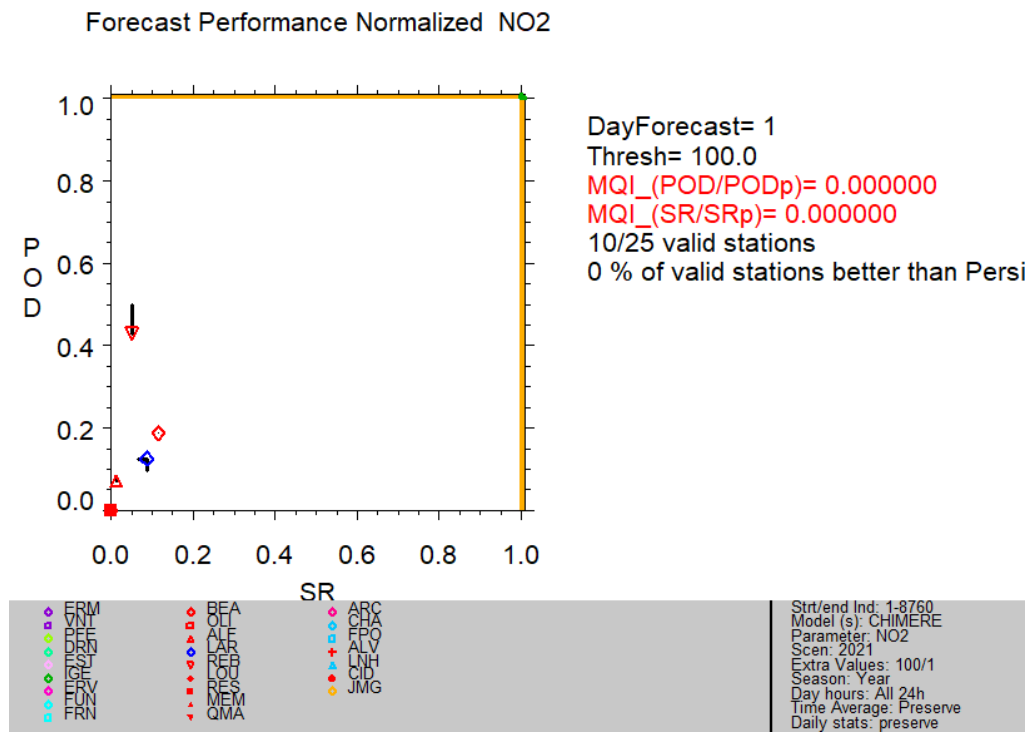
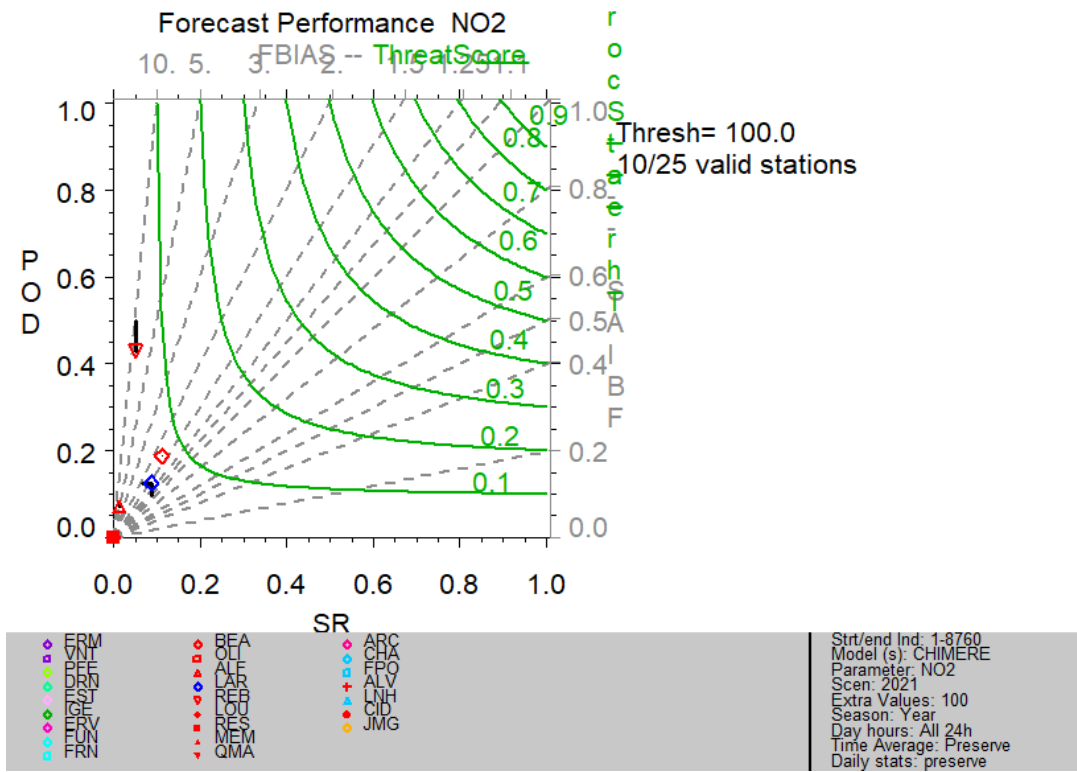
NO₂

ASSESSMENT vs FORECAST

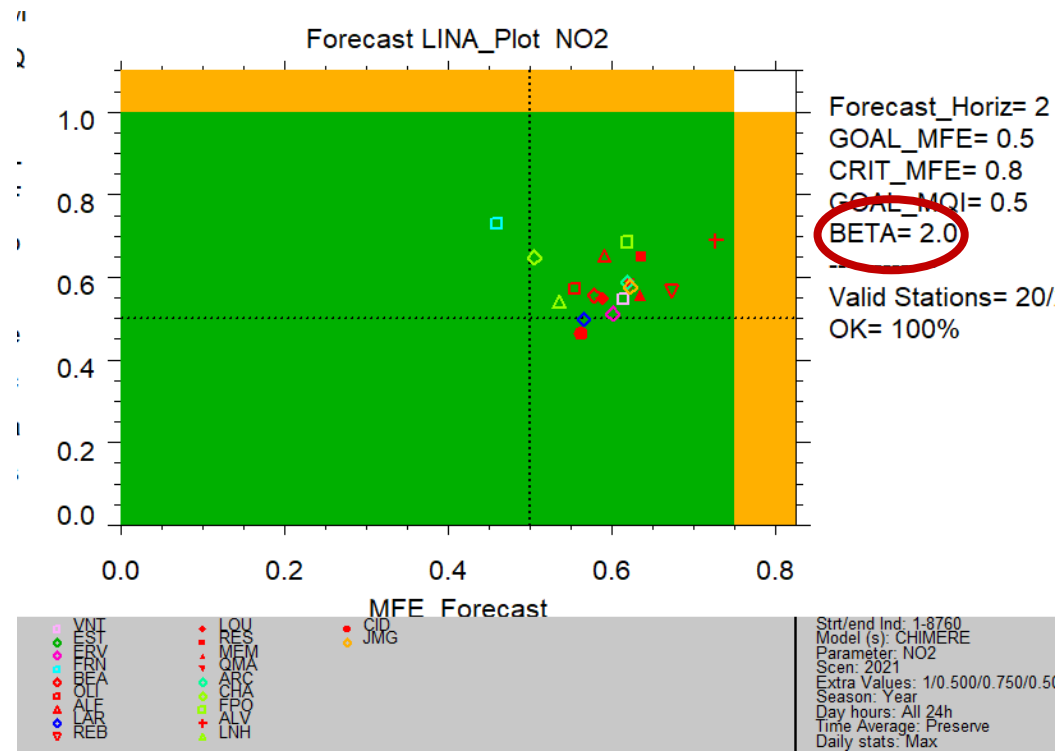
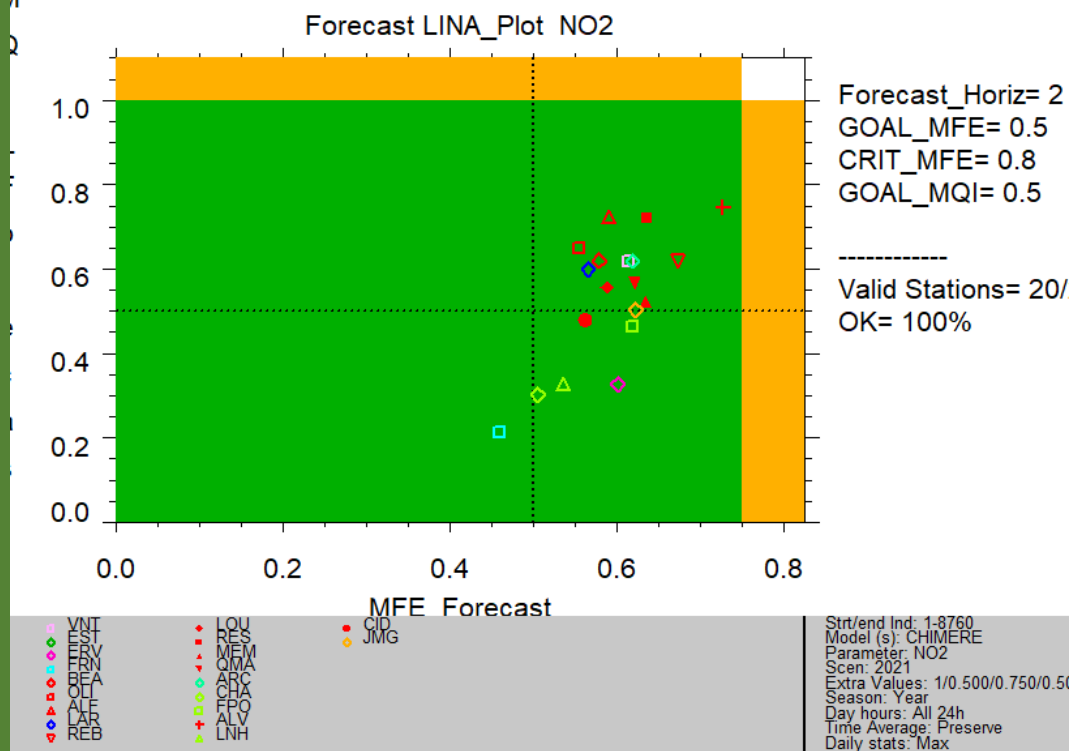


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NO₂

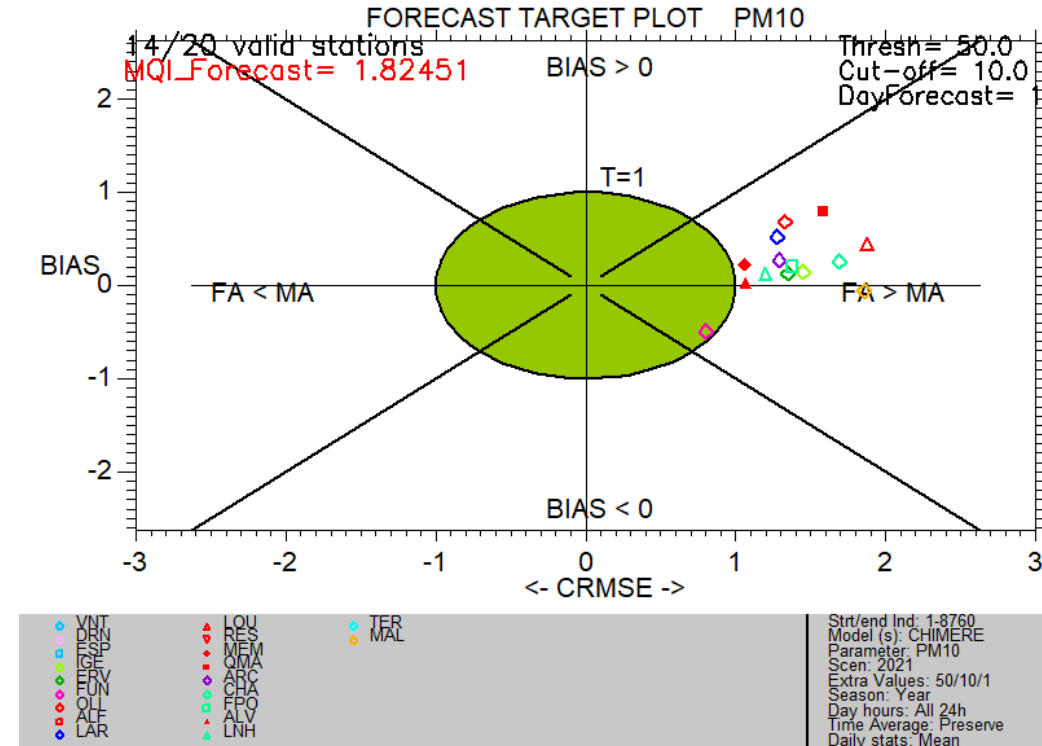
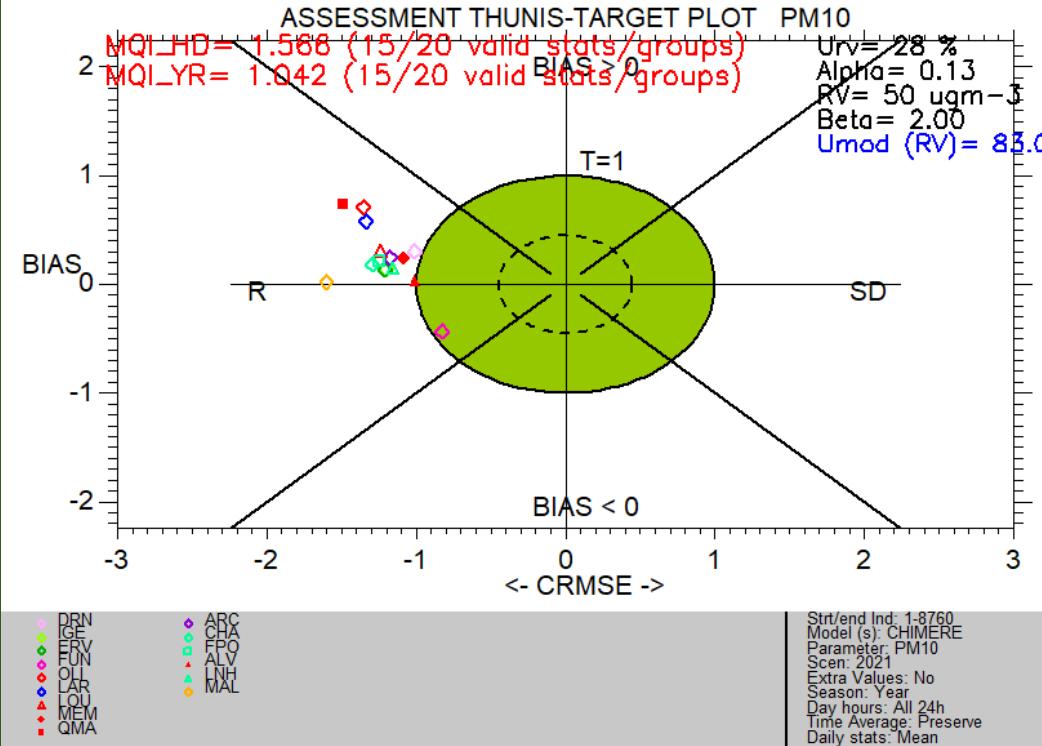


NO₂

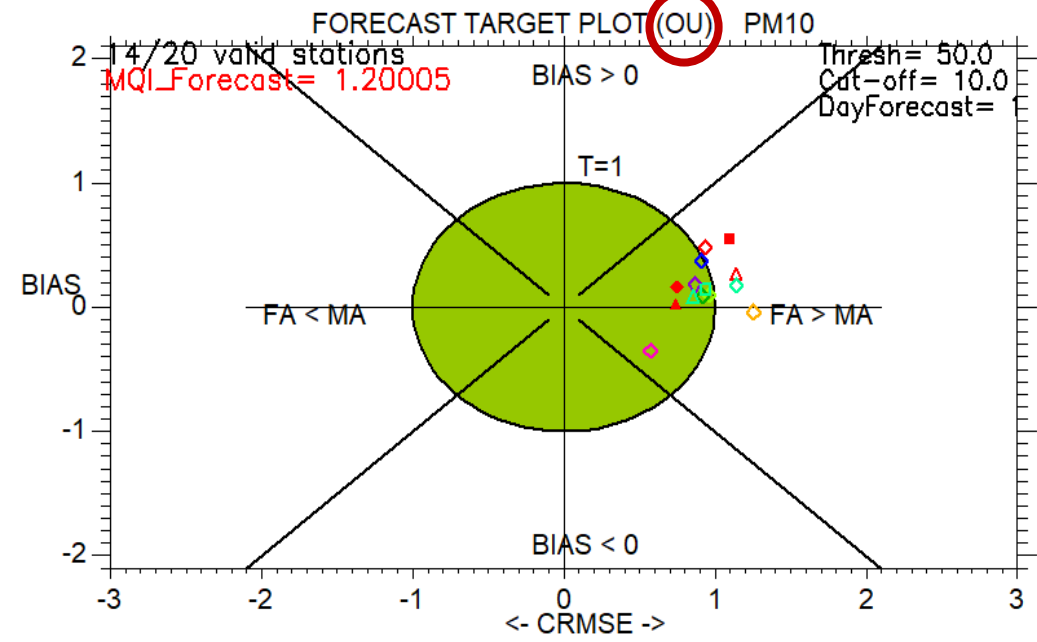
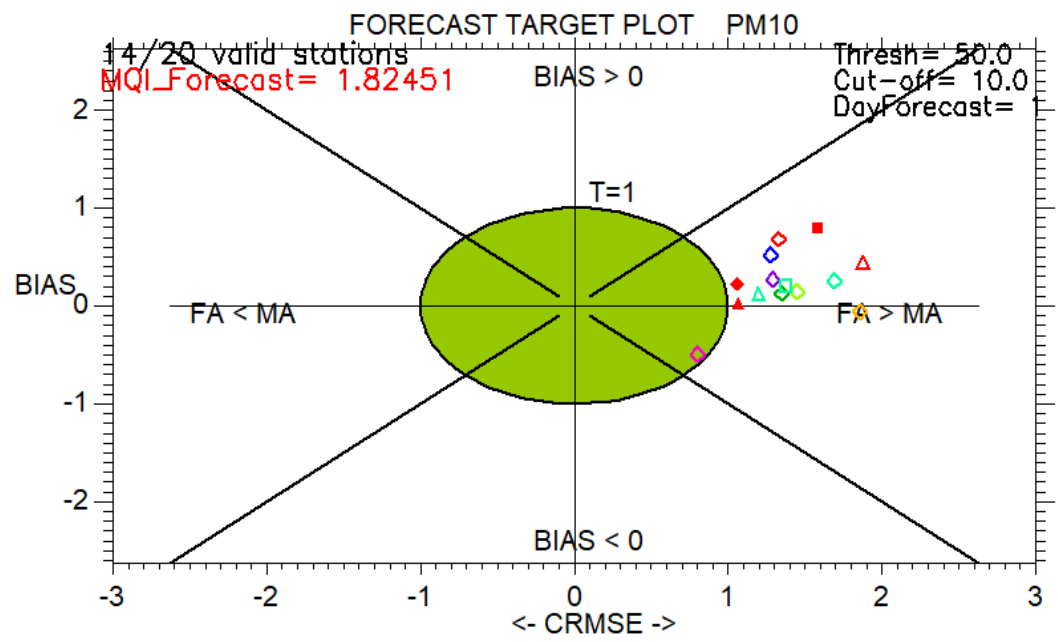


PM

ASSESSMENT vs FORECAST



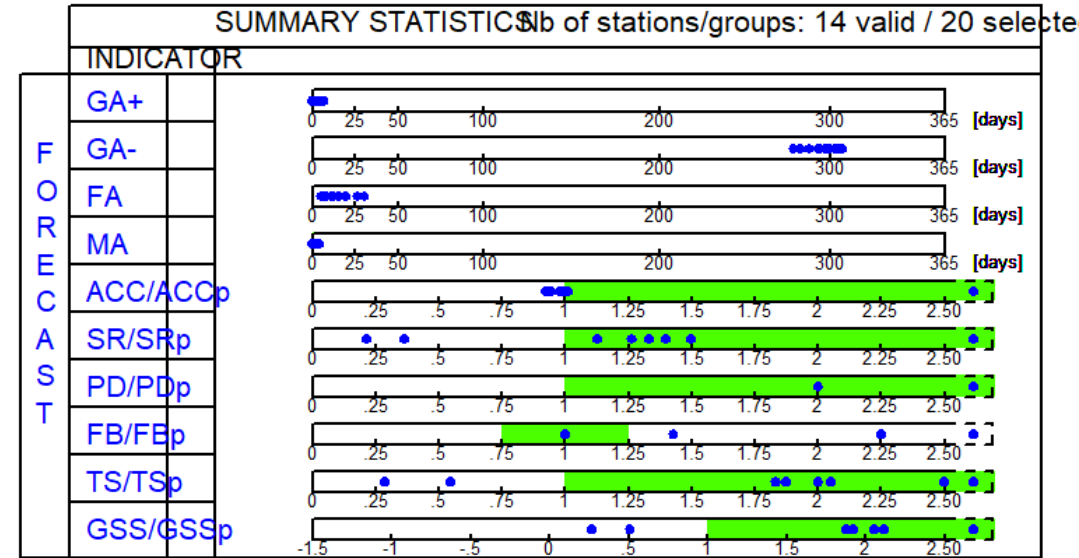
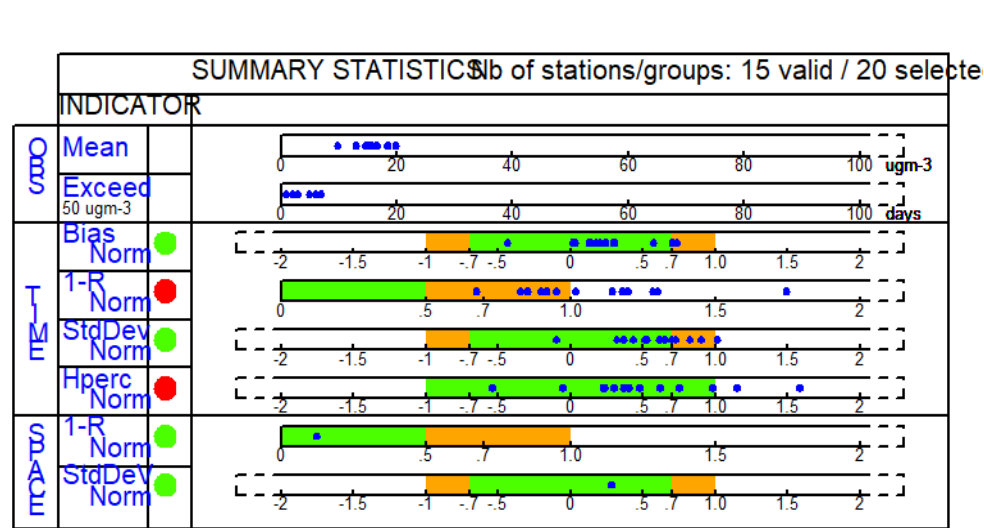
PM



<ul style="list-style-type: none"> ○ VNT ○ DRN ○ ESP ○ GEP ○ FRY ○ FUN ○ OLL ○ ALF ○ LAR 	<ul style="list-style-type: none"> ▲ LOU ▲ RES ▲ MEM ▲ QMA ▲ ARC ▲ CHA ▲ FPO ▲ ALV ▲ LNH 	<ul style="list-style-type: none"> ○ TER ○ MAL 	<p>Strt/end Ind: 1-8760 Model (s): CHIMERE Parameter: PM10 Scn: 2021 Extra Values: 50/10/1 Season: Year Day hours: All 24h Time Average: Preserve Daily stats: Mean</p>	<ul style="list-style-type: none"> ○ VNT ○ DRN ○ ESP ○ GEP ○ FRY ○ FUN ○ OLL ○ ALF ○ LAR 	<ul style="list-style-type: none"> ▲ LOU ▲ RES ▲ MEM ▲ QMA ▲ ARC ▲ CHA ▲ FPO ▲ ALV ▲ LNH 	<ul style="list-style-type: none"> ○ TER ○ MAL 	<p>Strt/end Ind: 1-8760 Model (s): CHIMERE Parameter: PM10 Scn: 2021 Extra Values: 50/10/1 Season: Year Day hours: All 24h Time Average: Preserve Daily stats: Mean</p>
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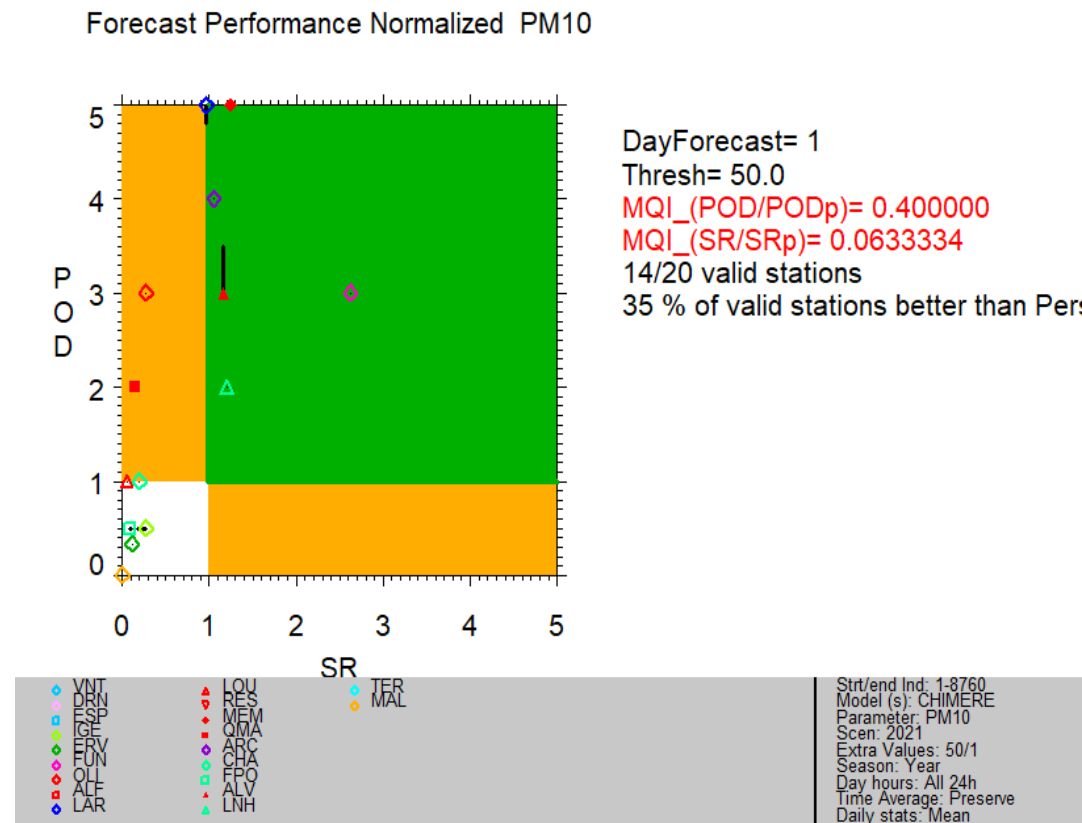
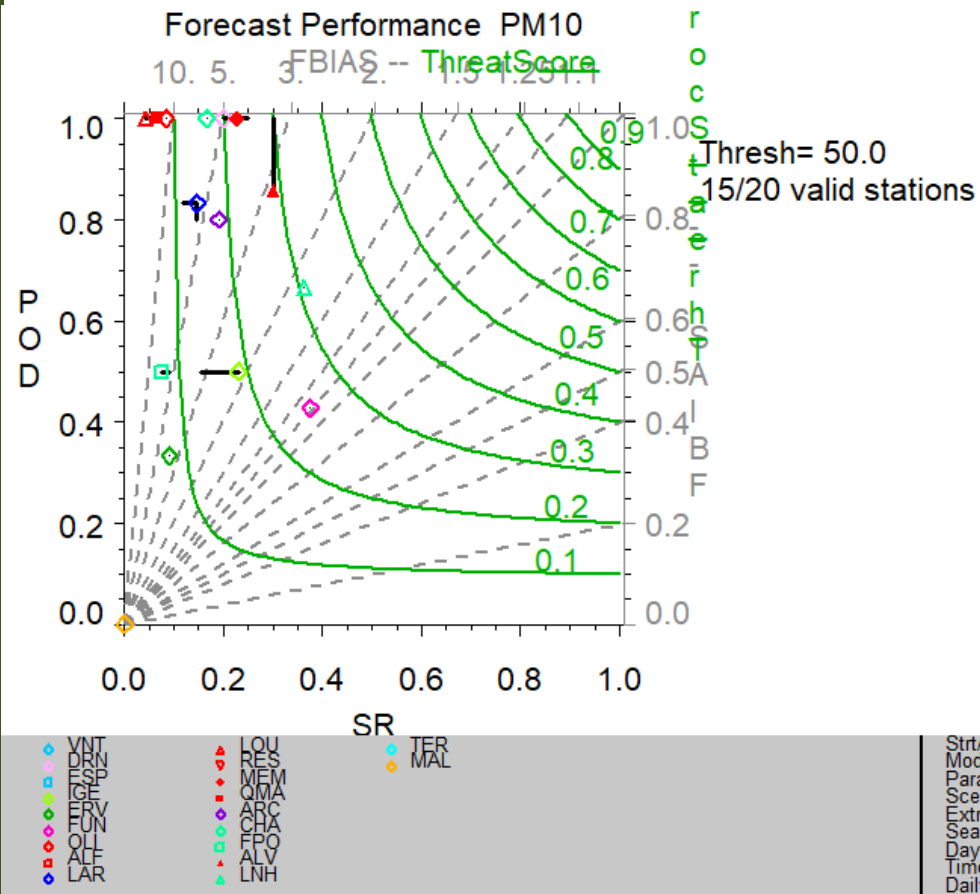
PM

ASSESSMENT vs FORECAST

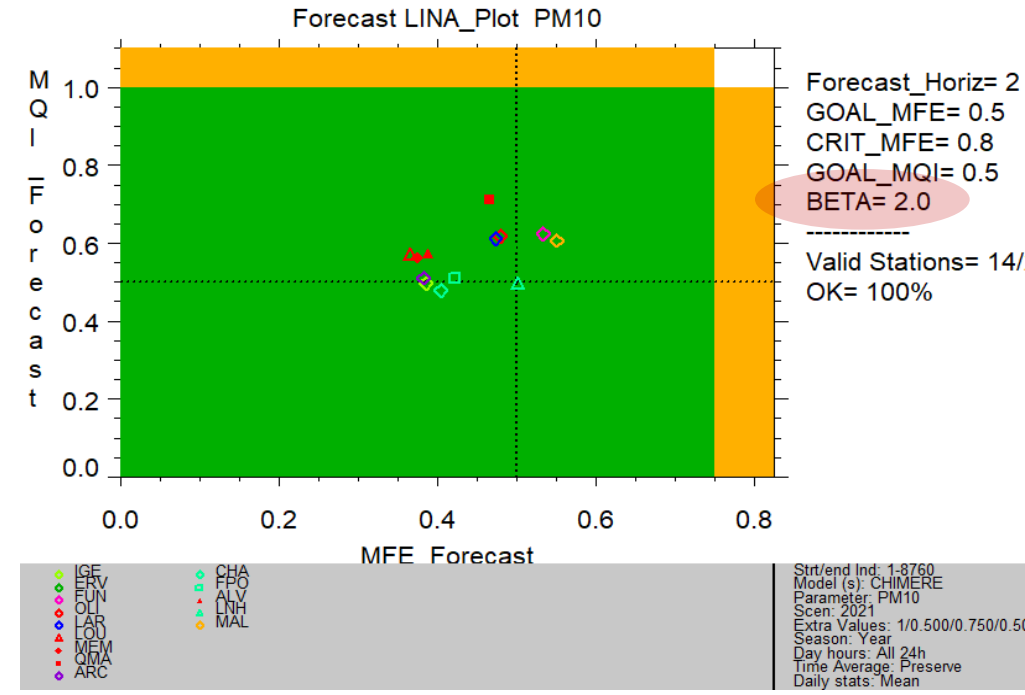
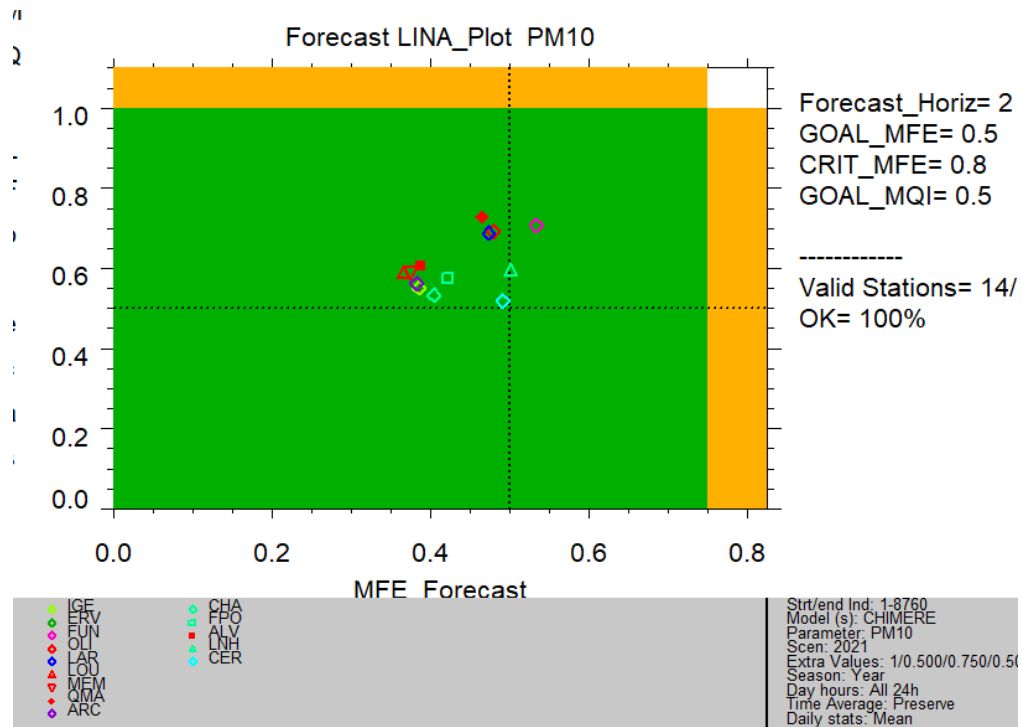


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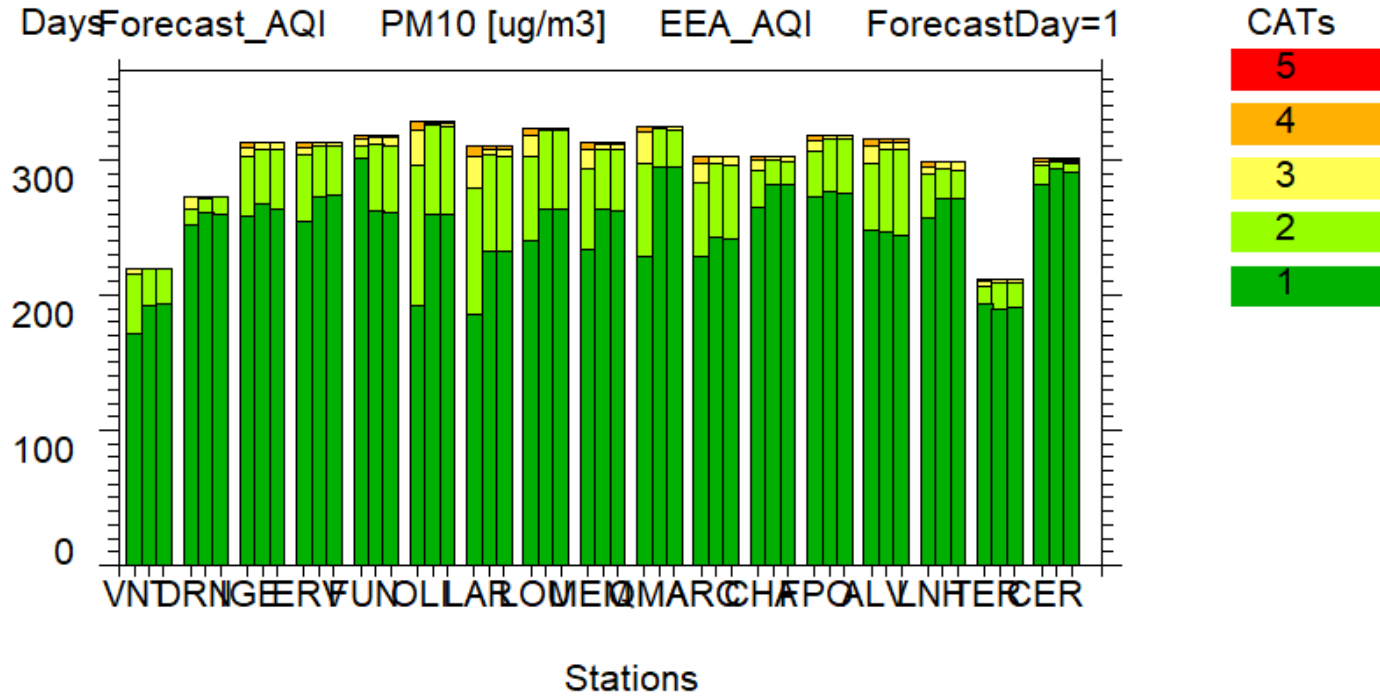
PM



PM



PM



SubBars: M O P:

EEA_AQI:

Cat5: Very Poor: 180.0--5000.0
 Cat4: Poor: 90.0--180.0
 Cat3: Medium: 50.0--90.0
 Cat2: Good: 25.0--50.0
 Cat1: Very Good: 0.0--25.0

Str/end Ind: 1-8760
 Model (s): CHIMERE
 Parameter: PM10
 Scen: 2021
 Extra Values: 1
 Season: Year
 Day hours: All 24h
 Time Average: Preserve
 Daily stats: Mean

Last note:

This type of analysis (AQI) was requested by the PT agency to evaluate the forecast system...

Aglomeracao Sul

	prev	prev	prev	prev	prev
obs	76	59	19	1	1
obs	24	63	8	0	0
obs	2	4	32	2	3
obs	0	0	1	0	0
obs	0	0	0	0	0

Algarve

	prev	prev	prev	prev	prev
obs	95	46	7	4	0
obs	15	51	6	2	2
obs	3	6	41	0	0
obs	1	0	0	0	1
obs	0	1	0	0	0

Alentejo Interior

	prev	prev	prev	prev	prev
obs	131	90	36	3	0
obs	3	36	3	1	1
obs	0	3	7	1	1
obs	0	0	1	2	0
obs	0	0	0	0	0

Alentejo Litoral

	prev	prev	prev	prev	prev
obs	104	95	67	11	3
obs	2	23	2	1	1
obs	0	0	1	0	0
obs	0	0	0	0	0
obs	0	0	0	0	0

AML Norte

	prev	prev	prev	prev	prev
obs	55	40	6	6	1
obs	27	45	23	3	3
obs	0	5	41	9	1
obs	0	0	0	4	1
obs	0	0	0	0	1

AML Sul

	prev	prev	prev	prev	prev
obs	37	32	7	4	0
obs	39	36	19	2	2
obs	3	10	44	14	2
obs	0	1	0	3	0
obs	0	1	0	1	1

Aveiro/Ilhavo

	prev	prev	prev	prev	prev
obs	46	18	0	1	0
obs	47	20	3	1	1
obs	6	10	43	6	0
obs	0	0	4	1	1
obs	0	0	0	0	0

Centro Interior

	prev	prev	prev	prev	prev
obs	72	31	0	0	0
obs	43	16	3	0	1
obs	3	33	68	3	1
obs	0	1	2	3	1
obs	0	0	0	0	0

Centro Litoral

	prev	prev	prev	prev	prev
obs	41	17	4	0	0
obs	73	17	1	1	1
obs	29	31	59	11	2
obs	0	6	3	1	0
obs	0	0	0	0	0

Coimbra

	prev	prev	prev	prev	prev
obs	105	57	16	0	1
obs	11	37	6	2	2
obs	1	9	37	3	0
obs	0	2	0	3	0
obs	0	0	0	0	0

Entre Douro e Minho

	prev	prev	prev	prev	prev
obs	77	46	11	5	0
obs	36	61	10	2	2
obs	6	8	12	3	0
obs	0	3	2	2	0
obs	0	0	0	0	0

Litoral Noroeste do Baixo Vouga

	prev	prev	prev	prev	prev
obs	91	46	4	3	0
obs	31	42	5	1	1
obs	1	10	32	4	0
obs	2	9	6	3	3
obs	0	3	2	1	0

Norte Interior

	prev	prev	prev	prev	prev
obs	106	71	24	3	0
obs	27	22	1	0	0
obs	3	21	37	1	0
obs	0	0	1	2	0
obs	0	0	0	0	0

Norte Litoral

	prev	prev	prev	prev	prev
obs	137	61	54	12	2
obs	16	12	0	0	0
obs	6	3	9	0	0
obs	0	0	0	0	0
obs	0	0	0	0	0

Oeste, Vale do Tejo e Peninsula de Setubal

	prev	prev	prev	prev	prev
obs	81	29	1	0	0
obs	52	19	8	2	2
obs	7	15	61	3	0
obs	0	0	1	2	0
obs	0	0	0	0	0

Porto Litoral

	prev	prev	prev	prev	prev
obs	61	57	18	8	0
obs	29	56	17	1	1
obs	0	3	14	9	0
obs	0	1	2	2	0
obs	0	0	0	0	0

Setubal

	prev	prev	prev	prev	prev
obs	38	36	4	4	0
obs	37	30	11	2	2
obs	6	14	49	6	0
obs	0	0	1	2	3
obs	0	0	0	0	0