DEALTA TOOL FORECAST PLOTS EXERCISES (on demo dataset)

Exe. num.	Elaboration	Pollutant	Model	Single/Group	Stations	Time period
1	Forecast Target Plot	O3	MOD1	Single	all	whole year
2	Forecast Target Plot	NO2	MOD&MOD2	Single	urban stations	whole year
3	Forecast Target Plot	NO2	MOD1	Group by Regions	all	whole year
4	Forecast MPI Plot	PM10	MOD2	Single	all	whole year
5	Forecast MPI Plot	O3	MOD1	Single	all	Summer
6	Forecast Summary Report	O3	MOD2	Single	all	whole year
7	Forecast Summary Report	O3	MOD2	Single	EMR stations	whole year
8	Forecast Summary P-Normalized Report	PM10	MOD1	Single	all	whole year
9	Forecast Summary P-Normalized Report	PM10	MOD1	Single	valley stations	whole year
10	Forecast Threshold Performance Plot	O3	MOD1&MOD2	Single	plane stations	whole year
11	Forecast Threshold Performance Plot	O3	MOD1&MOD2	Single	plane stations	Summer
12	Forecast Threshold Normalized Performance Plot	PM10	MOD1&MOD2	Single	all	whole year
13	Forecast Threshold Normalized Performance Plot	PM10	MOD2	Single	plane stations	Winter
14	Forecast Bar Plot - Accuracy	O3	MOD2	Single	valley stations	whole year
15	Forecast Bar Plot – POD&SR	PM10	MOD1	Single	rural plane stations	whole year
16	Forecast Bar Plot – POD	PM10	MOD1&MOD2	Single	rural plane stations	whole year
17	Forecast AQI Plot	O3	MOD2	Single	valley stations	whole year
18	Forecast AQI Plot	PM10	MOD1	Group by Area Type	all	whole year

RECOMMENDED EXERCISES

BEGINNER USERS:	1, 4, 8, 15, 17
INTERMEDIATE USERS:	2, 5, 6, 10, 17
ADVANCED USERS:	3, 5, 9, 13, 18

EXERCISE 1

FORECAST TARGET PLOT (OU)   O3

51/53 valid stations

MQI_Forecast= 1.05187

BIAS > 0

Thresh= 120.0
Forecast_Horiz= 0.0

T=1

BIAS

FA < MA

FA >= MA

BIAS < 0

2

1

0

-1

-2

-2   -1   0   1   2

<- CRMSE ->
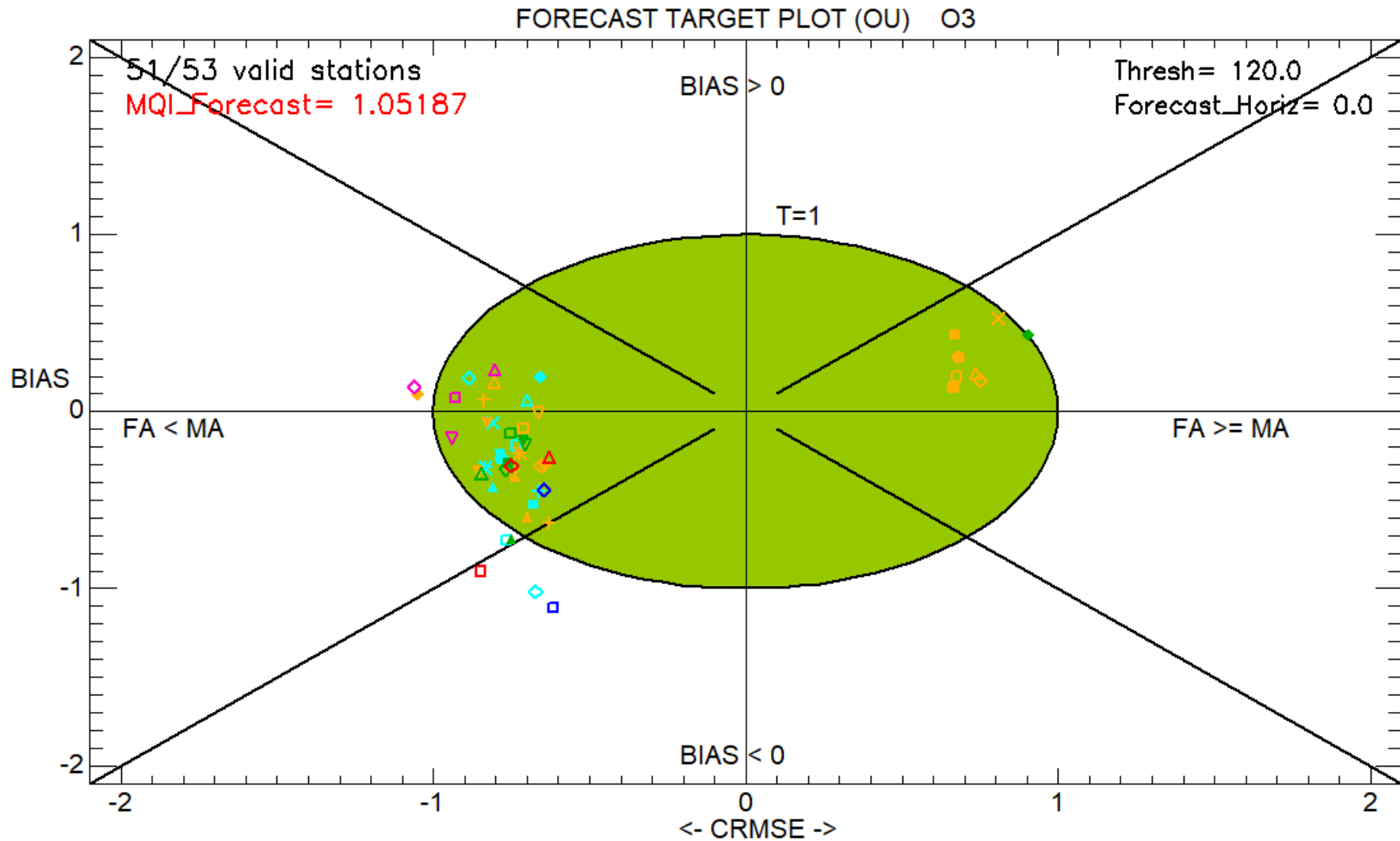
⬦ Castagamneto_	AcquiTerme	⬦ Erba	⬜ Meda	⬜ Riva_del_Gard	Strt/end Ind: 1-8760	
⬜ Torino_lingot	⬛ BIELLA_Sturzo	⬜ Cantu	△ Milano_Verzie	△ Rovereto_Larg	Model (s): MOD1	
△ Borgaro	✕ COSSATO	△ Bormio	▽ VIMERCATE	▽ Trento_Gardol	Parameter: O3	
▽ DruentoMandri	⬦ PONZONE_Merca	⬦ Morbegno_Cort	✦ Lacchierella	⬦ Verona_Cason	Scen: 2005	
✦ ALESSANDRIA_N	⬜ VERRONE_Zumag	+ Arconate	⬛ Bergamo_Via_G	⬜ Bassano	Extra Values: 120/0	
⬛ CUNEO_Alpini	⬦ Varese_Vidole	⬦ Arese	△ OSIO_SOTTO	△ Schio	Season: Year	
· Alba	⬜ Saronno_Santu	⬛ Cormano	⬦ Lonato	▽ Conegliano	Day hours: All 24h	
▽ ASTI_DACQUIST	△ Colico	✕ Milano_Juvara	+ SAREZZO	✦ Treviso_viaLa	Time Average: 8h	
+ Buttiglierada	▽ Gambara	⬦ Limito_di_Pio	⬦ Borgo_Valsuga	⬛ Venezia_Sacca	Daily stats: Max	

EXERCISE 2

FORECAST TARGET PLOT (OU)   NO2

EXERCISE 3

FORECAST TARGET PLOT (OU)   NO2
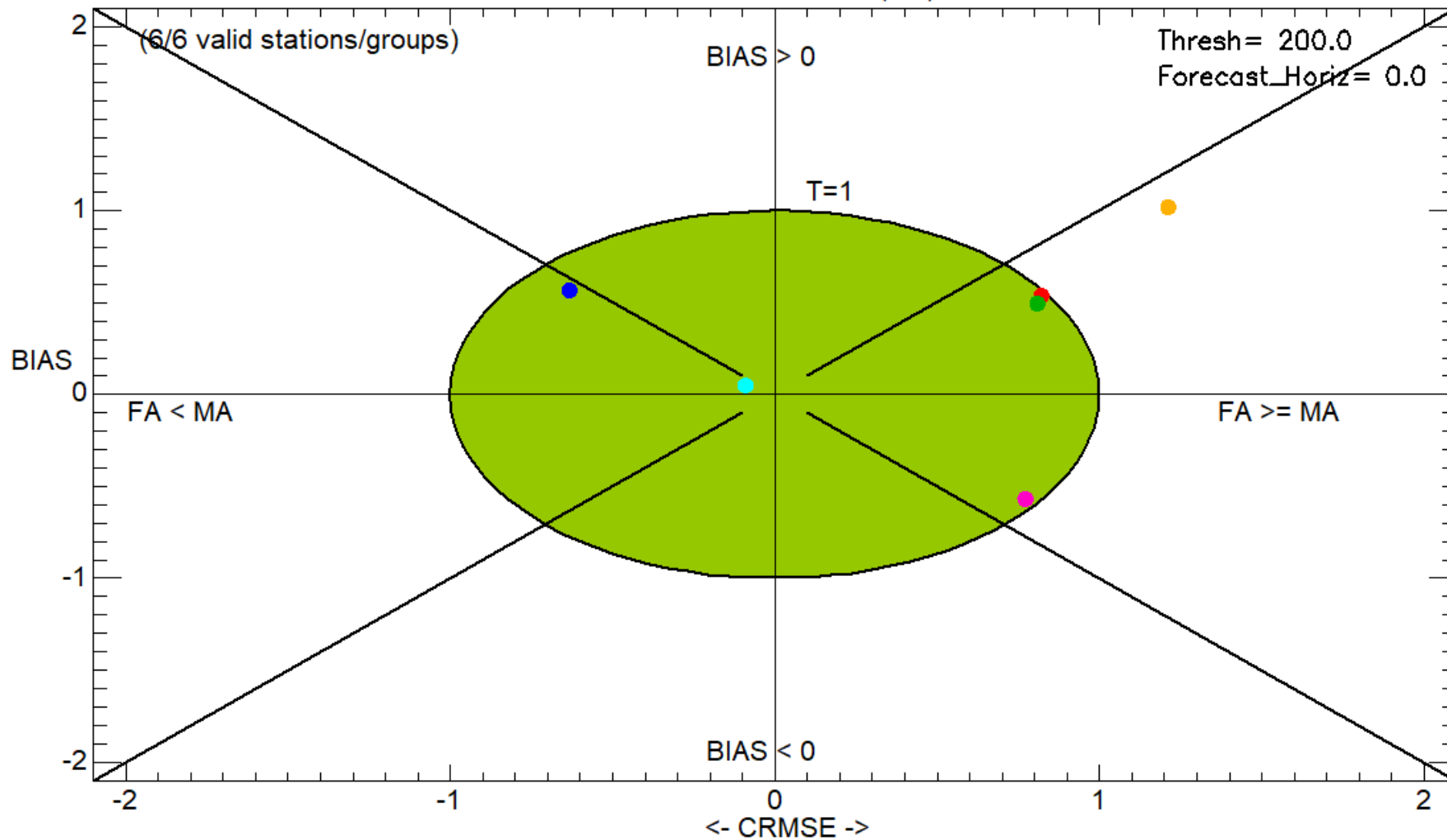
EXERCISE 4

Forecast_MPI Plot PM10
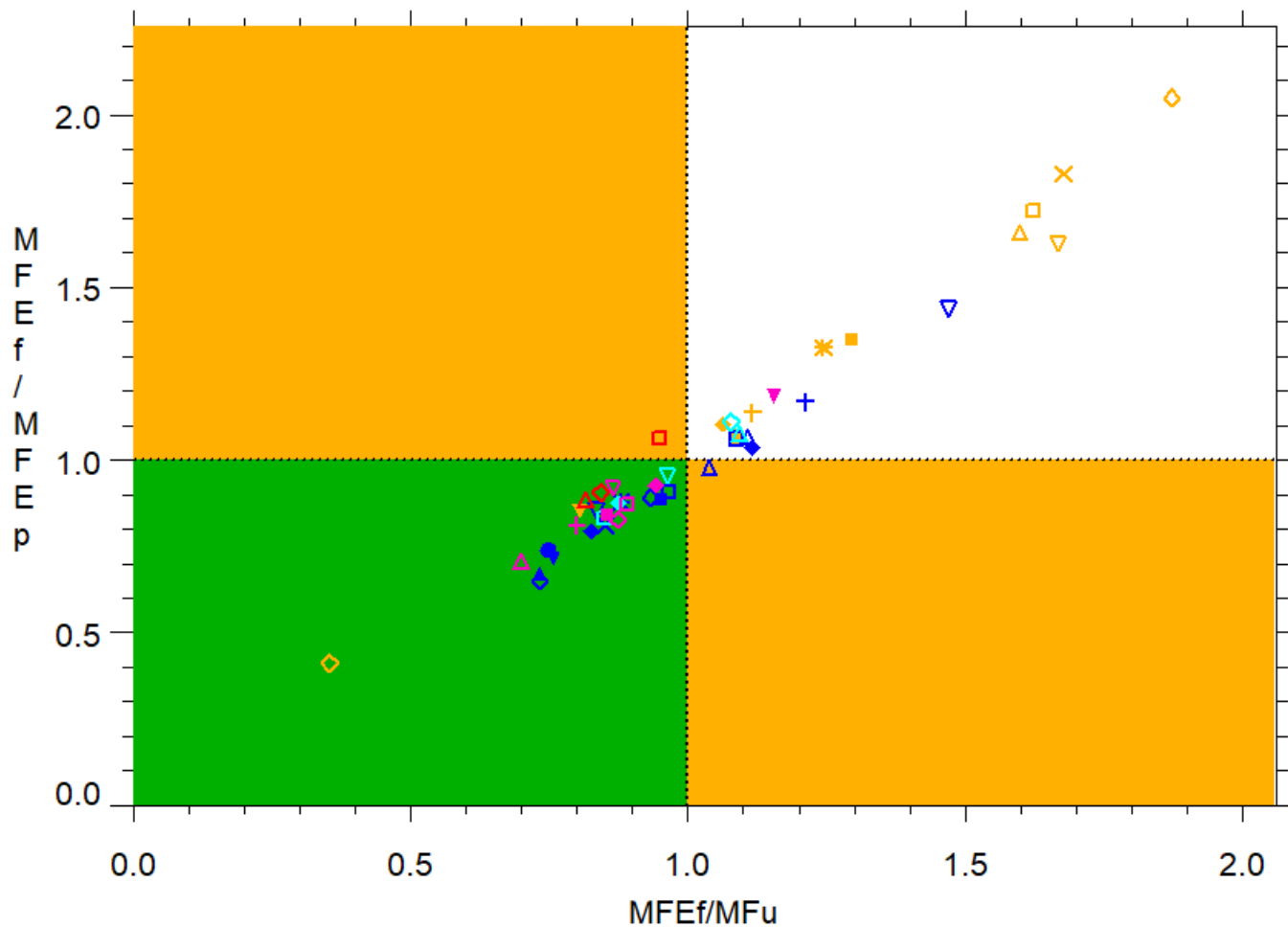
Forecast_Horiz= 0

Valid Stats= 45/48

OK= 55%

MFEf/MFEp (y-axis)

MFEf/MFu (x-axis)

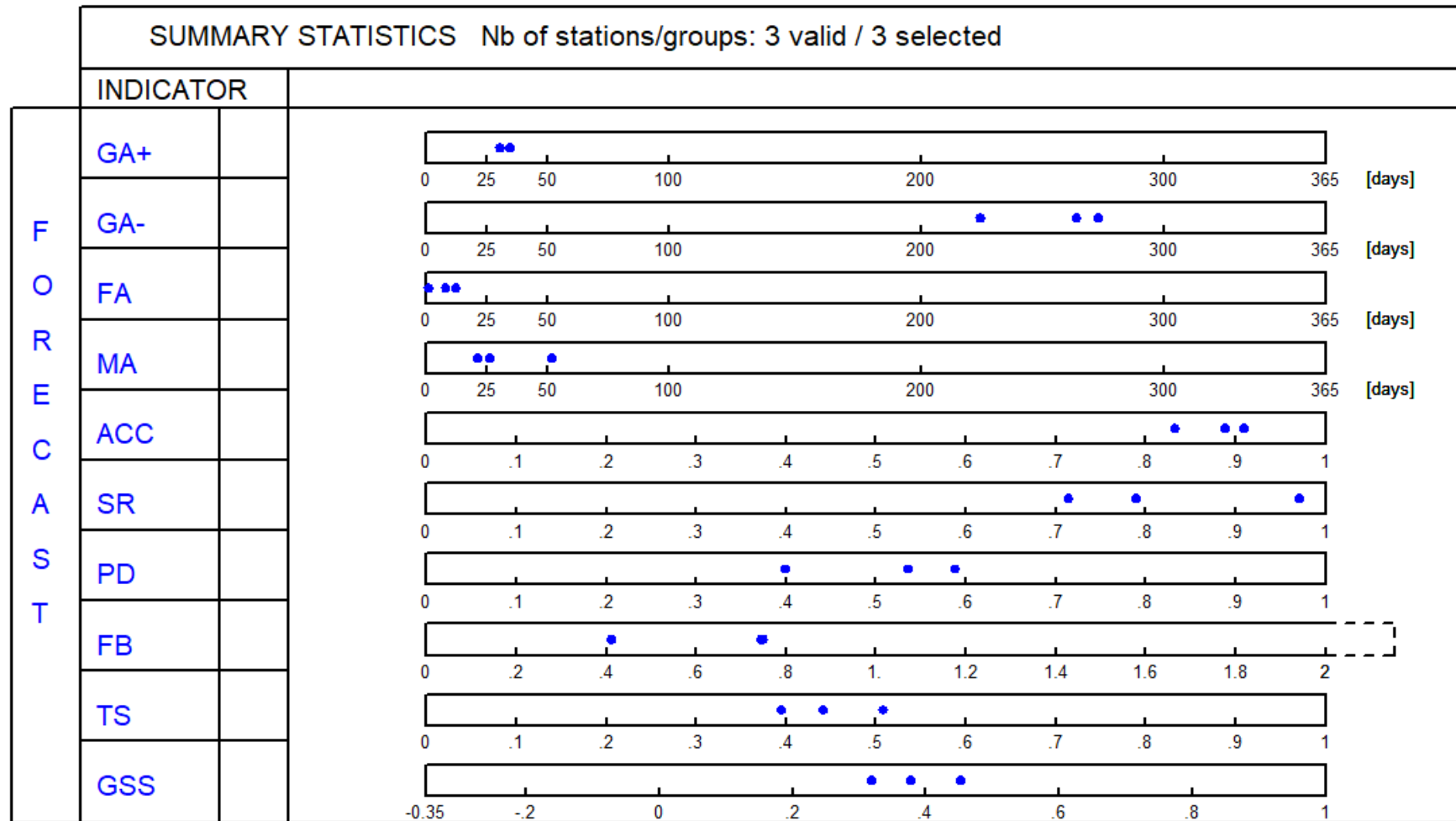|					
◇ Castagamneto_	× COSSATO	▲ Milano_Juvara	▽ S_ROCCO_AL_PO	▽ Conegliano	Strt/end Ind: 1-8760
△ Borgaro	◇ PONZONE_Merca	▼ Limito_di_Pio	◇ Borgo_Valsuga	▽ Treviso_viaLa	Model (s): MOD2
▽ DruentoMandri	□ VERRONE_Zumag	+ Meda	□ Riva_del_Gard	■ Venezia_Sacca	Parameter: PM10
◆ ALESSANDRIA_N	◇ Saronno_Santu	◆ Milano_Verzie	△ Rovereto_Larg	▼ Rovigo_Borsea	Scen: 2005
■ ALESSANDRIA_L	□ Erba	✳ VIMERCATE	▽ Trento_Gardol	+ Castelnovo_Ba	Extra Values: 0
▼ Alba	△ Cantu	✕ OSIO_SOTTO	◆ Trento_ViaVen	◇ MODENA_XX_SET	Season: Year
+ ASTI_DACQUIST	▽ Bormio	◇ Brescia_Brole	◇ Verona_Cason	□ Monte_Cuccoli	Day hours: All 24h
△ Buttiglierada	◆ Morbegno_Cort	□ REZZATO	■ Schio	△ FE_GHERARDI	Time Average: Preserve
■ BIELLA_Sturzo	▲ Arese	△ SAREZZO	△ VICENZA_Quart	◆ EMEP_Ispra	Daily stats: Mean

EXERCISE 5

Forecast_MPI Plot O3

Forecast_Horiz= 0

Valid Stats= 51/53

OK= 49%

MFEf/MFEp

MFEf/MFu
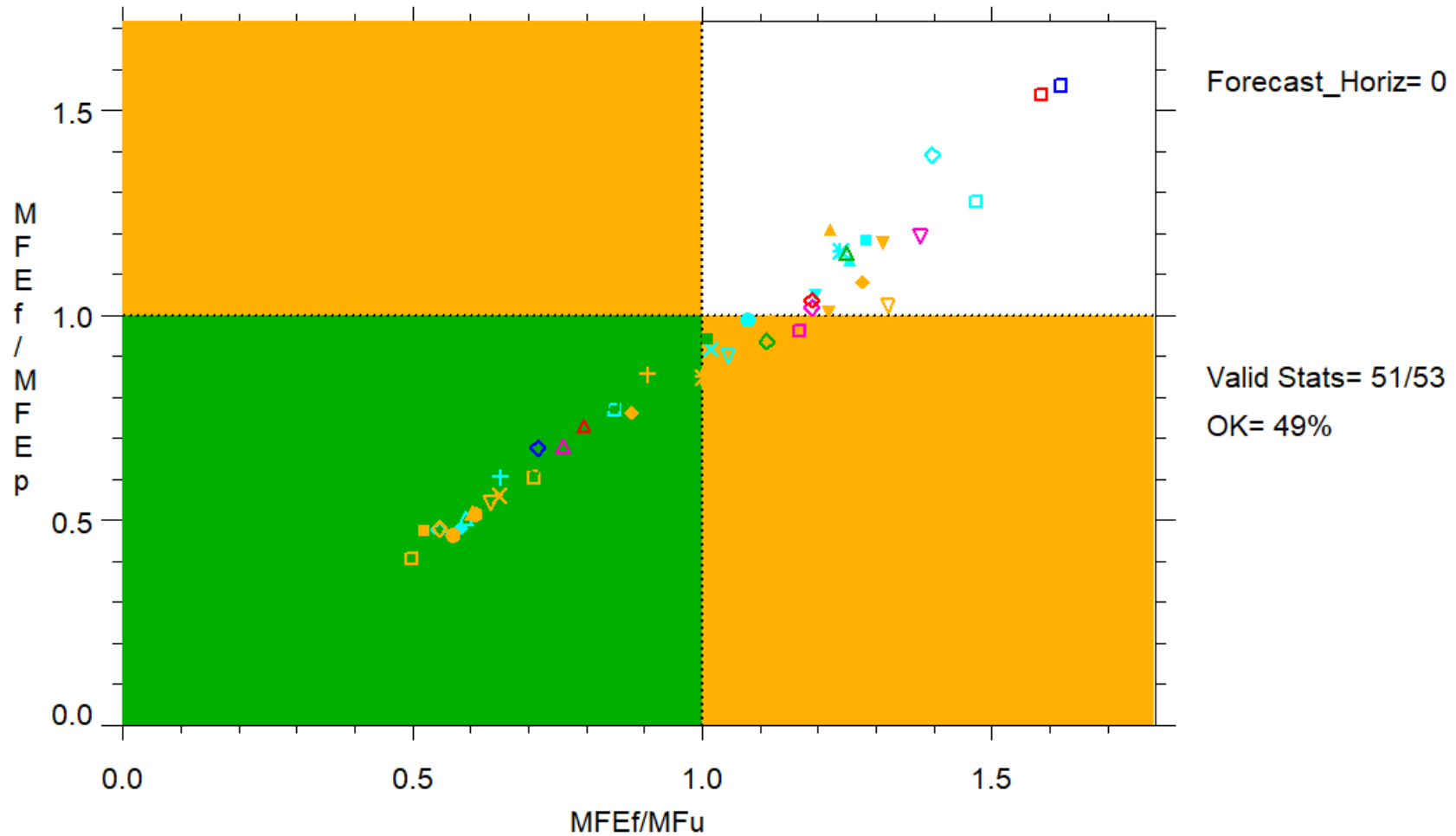
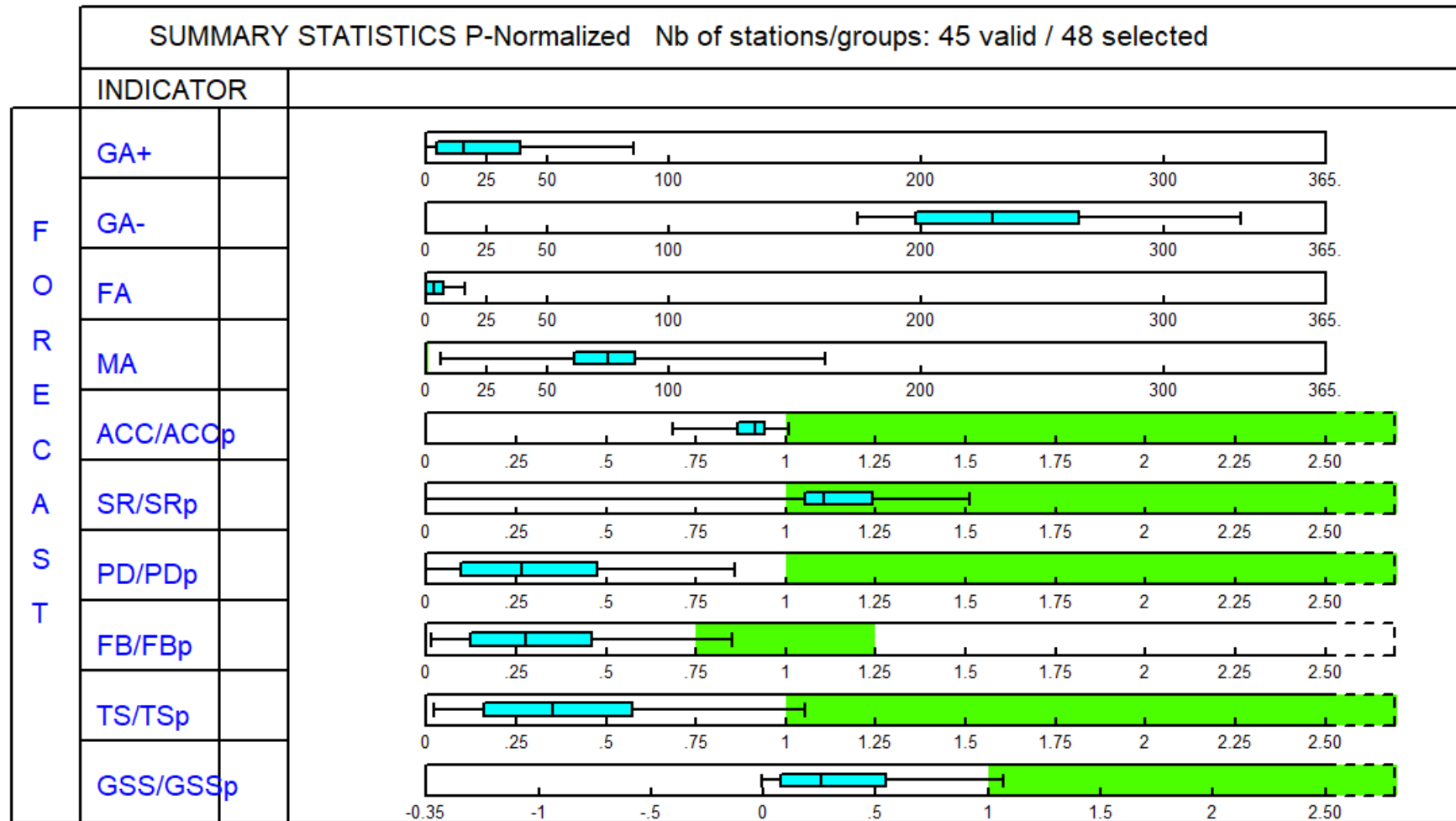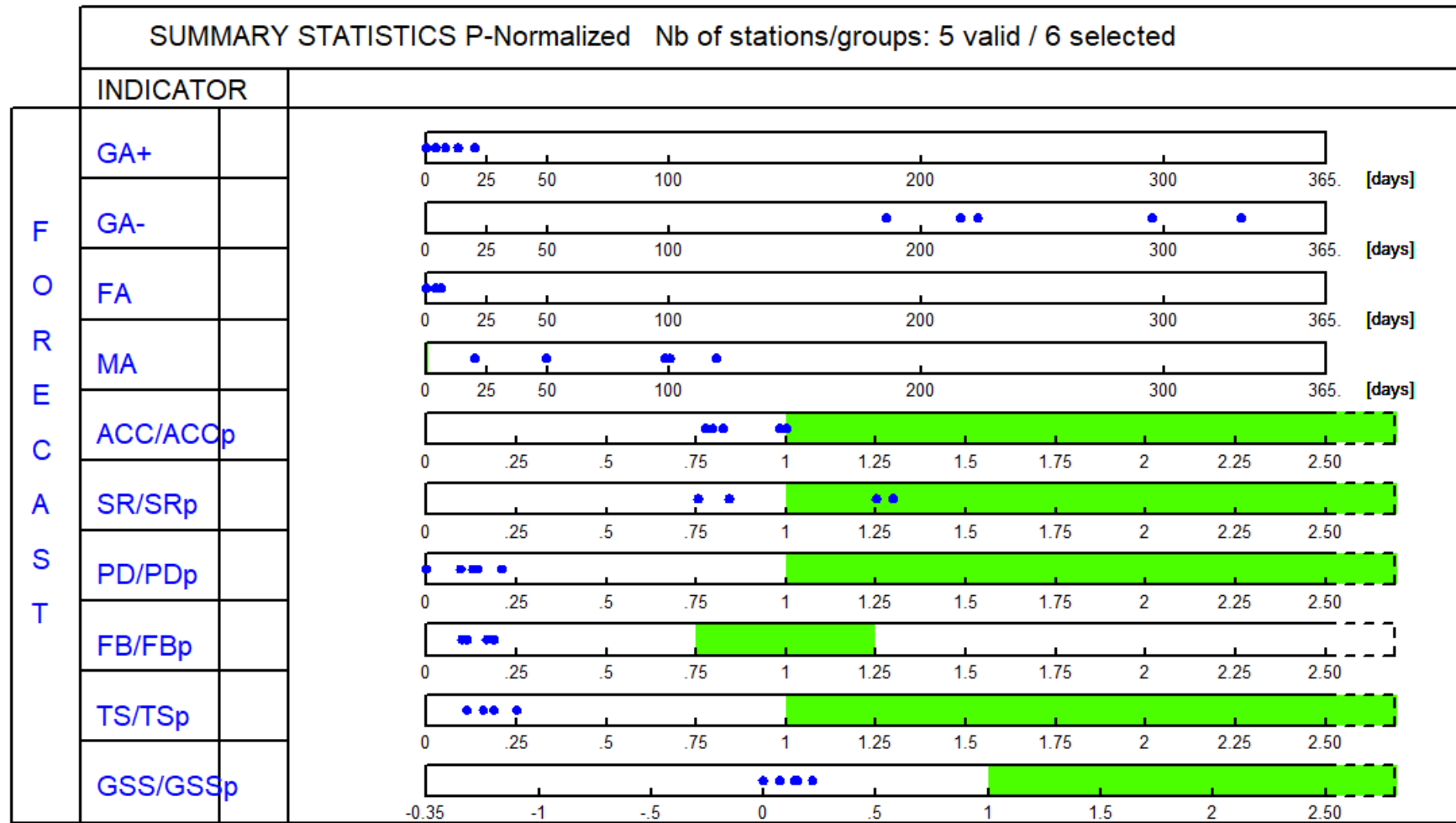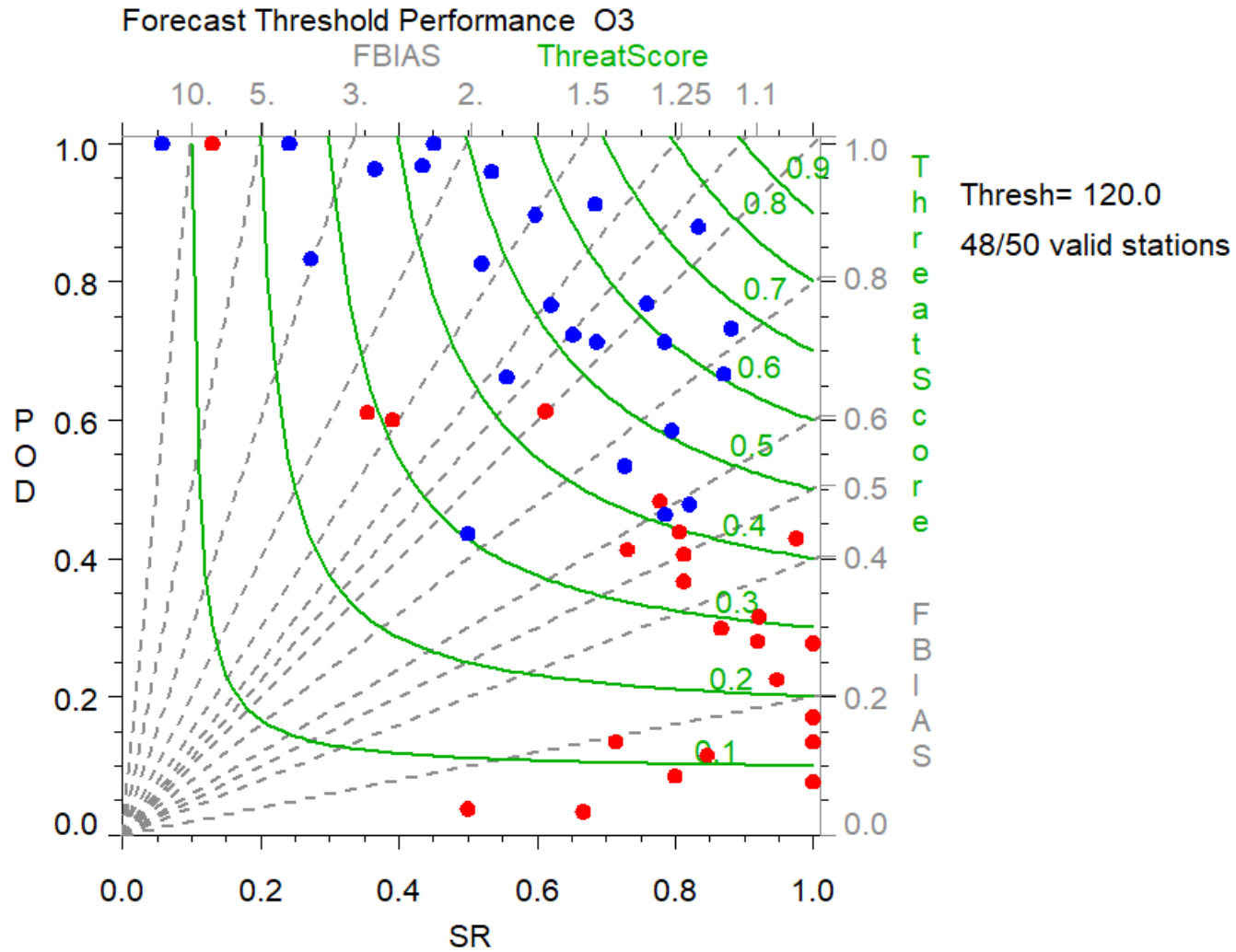|				
Castagamneto_	AcquiTerme	Bormio	VIMERCATE	Trento_Gardol
Torino_lingot	BIELLA_Sturzo	Morbegno_Cort	Lacchierella	Verona_Cason
Borgaro	COSSATO	Arconate	Bergamo_Via_G	Bassano
DruentoMandri	PONZONE_Merca	Arese	OSIO_SOTTO	Schio
ALESSANDRIA_N	VERRONE_Zumag	Cormano	Lonato	Conegliano
CUNEO_Alpini	Varese_Vidole	Milano_Juvara	SAREZZO	Treviso_viaLa
Alba	Saronno_Santu	Limito_di_Pio	Borgo_Valsuga	Venezia_Sacca
ASTI_DACQUIST	Gambara	Meda	Riva_del_Gard	Moncelice
Buttiglierada	Erba	Milano_Verzie	Rovereto_Larg	Rovigo_Borsea

Strt/end Ind: 1-8760
Model (s): MOD1
Parameter: O3
Scen: 2005
Extra Values: 0
Season: Summer
Day hours: All 24h
Time Average: 8h
Daily stats: Max

EXERCISE 6

SUMMARY STATISTICS   Nb of stations/groups: 51 valid / 53 selected

INDICATOR	
GA+	
GA-	
FA	
MA	
ACC	
SR	
PD	
FB	
TS	
GSS	

EXERCISE 7

SUMMARY STATISTICS   Nb of stations/groups: 3 valid / 3 selected

INDICATOR

EXERCISE 8

SUMMARY STATISTICS P-Normalized   Nb of stations/groups: 45 valid / 48 selected

EXERCISE 9

| SUMMARY STATISTICS P-Normalized   Nb of stations/groups: 5 valid / 6 selected |

EXERCISE 10

Forecast Threshold Performance O3

Thresh= 120.0

48/50 valid stations

MOD1
MOD2
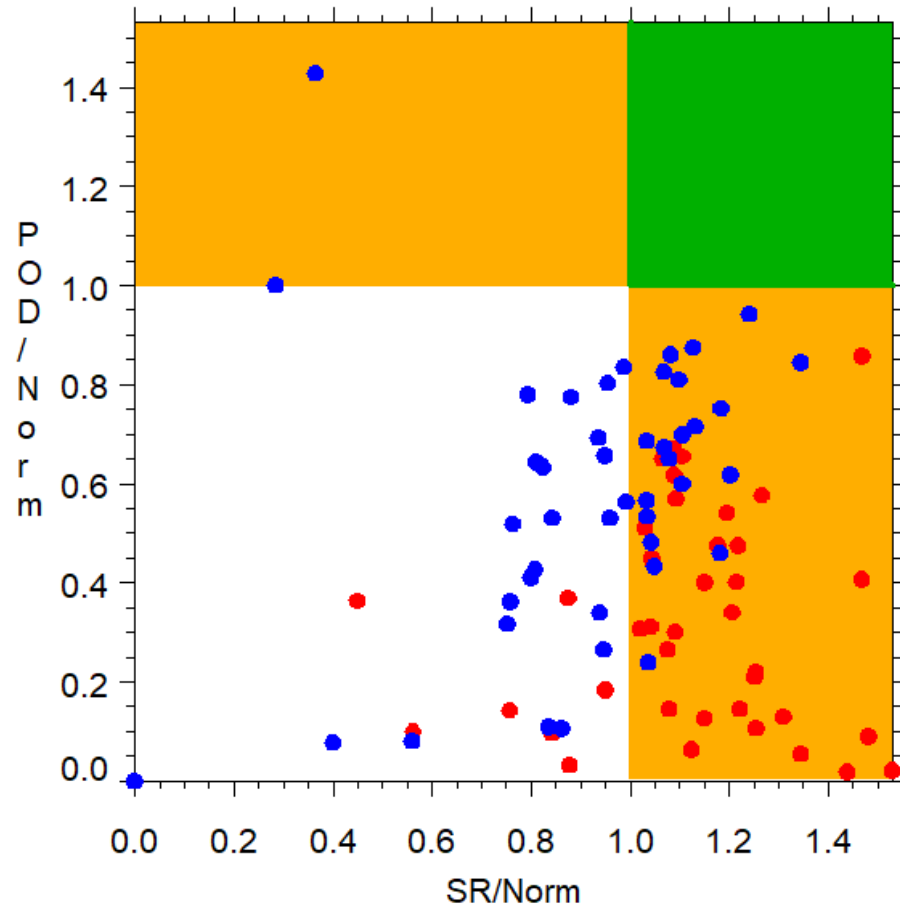
Strt/end Ind: 1-8760
Parameter: O3
Scen: 2005
Extra Values: 120
Season: Year
Day hours: All 24h
Time Average: 8h
Daily stats: Max

EXERCISE 11

Forecast Threshold Performance O3

Thresh= 120.0

48/50 valid stations

MOD1
MOD2
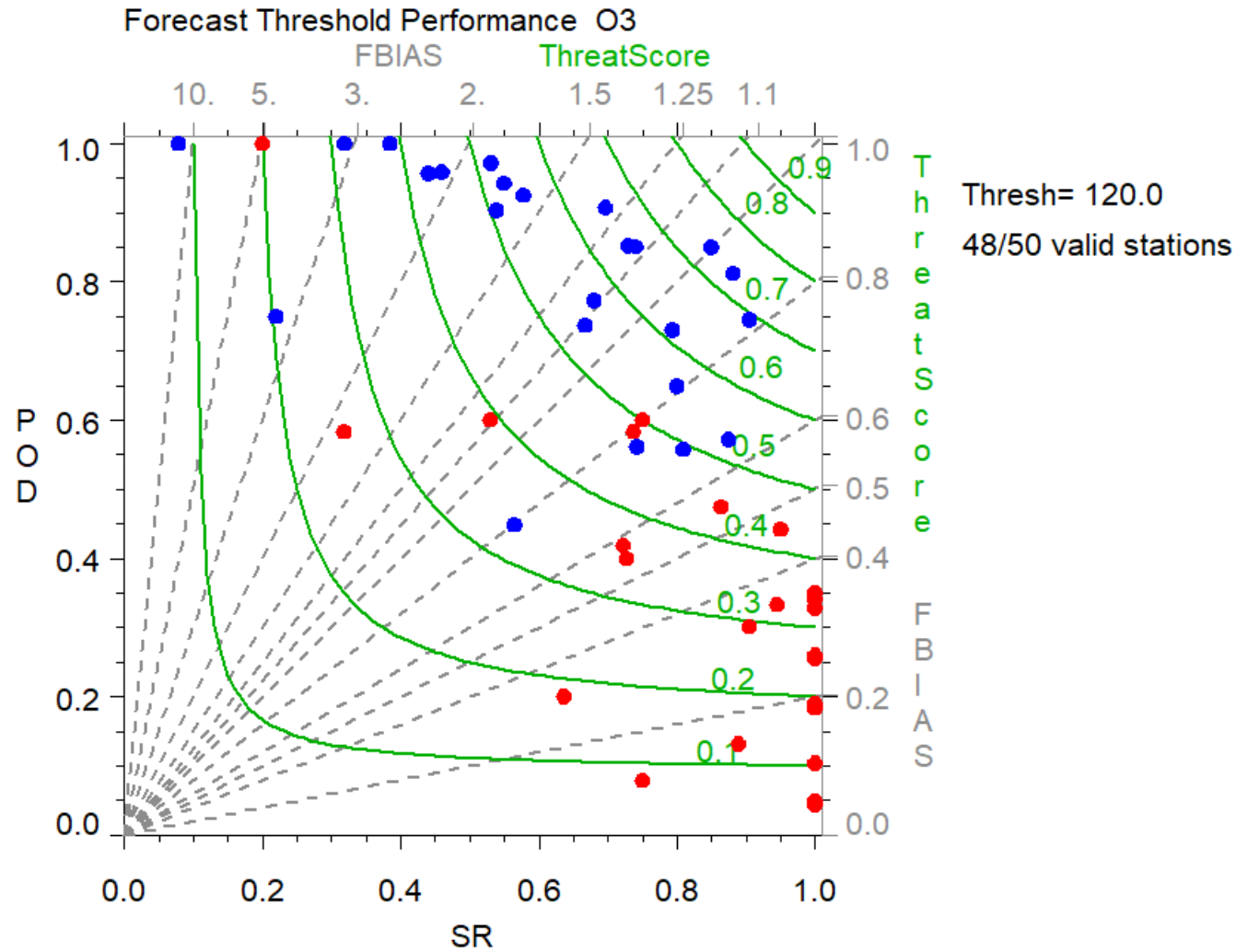
Strt/end Ind: 1-8760
Parameter: O3
Scen: 2005
Extra Values: 120
Season: Summer
Day hours: All 24h
Time Average: 8h
Daily stats: Max

EXERCISE 12

Forecast Threshold Performance Normalized PM10

Forecast_Horiz= 0

Thresh= 50.0

MPI_(POD/PODp)= 0.0855714
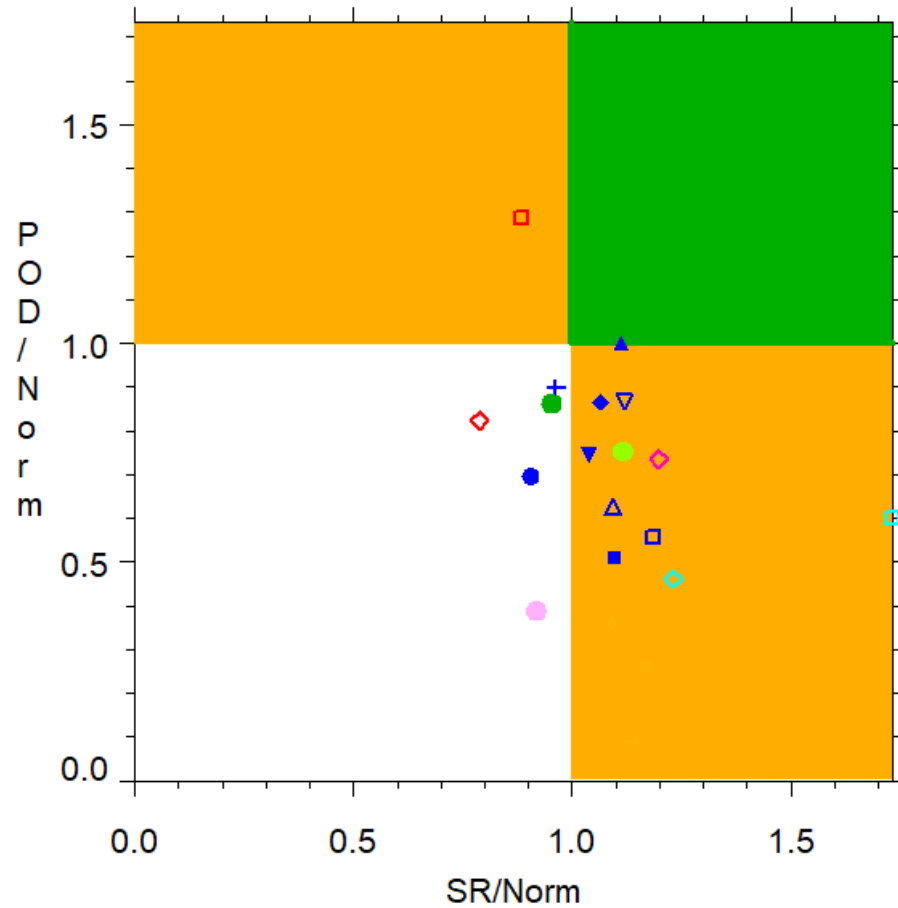
MPI_(SR/SRp)= 0.755419

86/96 valid stations

0 % valid Stats better than Persistence

MOD1
MOD2

Strt/end Ind: 1-8760
Parameter: PM10
Scen: 2005
Extra Values: 50/0
Season: Year
Day hours: All 24h
Time Average: Preserve
Daily stats: Mean

EXERCISE 13

Forecast Threshold Performance Normalized PM10

Forecast_Horiz= 0
Thresh= 50.0
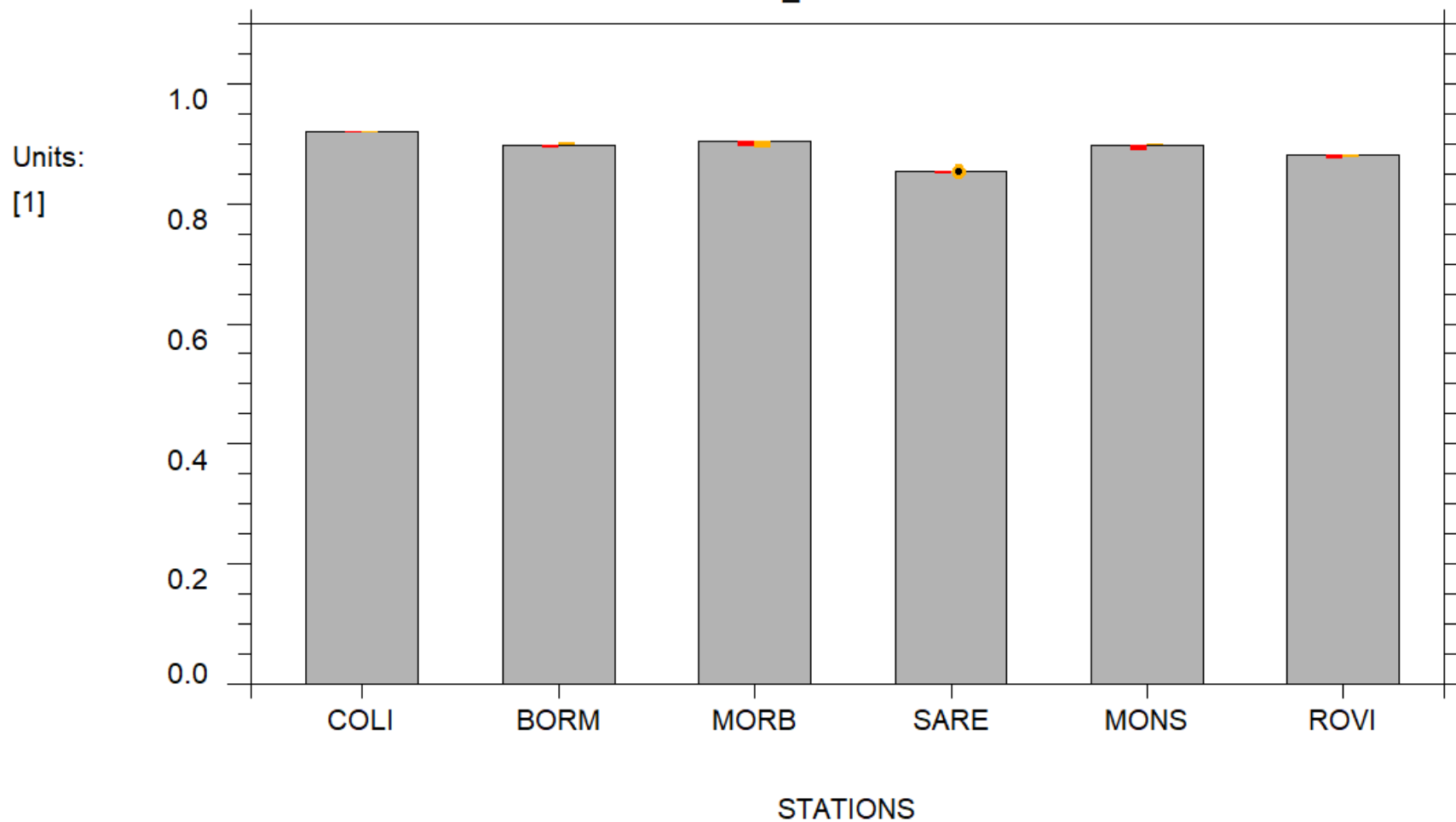MPI_(POD/PODp)= 0.366071
MPI_(SR/SRp)= 0.907187
21/24 valid stations
4 % valid Stats better than Persistence

Torino_lingot	Milano_Juvara	Venezia_Sacca
Borgaro	Limito_di_Pio	MODENA_XX_SET
ALESSANDRIA_N	Meda	FE_GHERARDI
ALESSANDRIA_L	Milano_Verzie	hilly
Buttiglierada	VIMERCATE	plane
VERRONE_Zumag	OSIO_SOTTO	valley
Saronno_Santu	S_ROCCO_AL_PO	
Cantu	Riva_del_Gard	
Arese	Rovereto_Larg	

Strt/end Ind: 1-8760
Model (s): MOD2
Parameter: PM10
Scen: 2005
Extra Values: 50/0
Season: Winter
Day hours: All 24h
Time Average: Preserve
Daily stats: Mean

EXERCISE 14

Forecast_ACCURACY   O3

Units:
[1]

STATIONS

EXERCISE 15

Forecast_POD&SR   PM10

Units:
[1]

STATIONS

■ Threshold Sensitivity -1 Unit	□ POD	□ SR
■ Threshold Sensitivity +1 Unit	□ =0	□ =0
● = 0	■ =0/0 (NaN)	■ =0/0 (NaN)
✕ = 0/0 (NaN)		

Strt/end Ind: 1-8760
Model (s): MOD1
Parameter: PM10
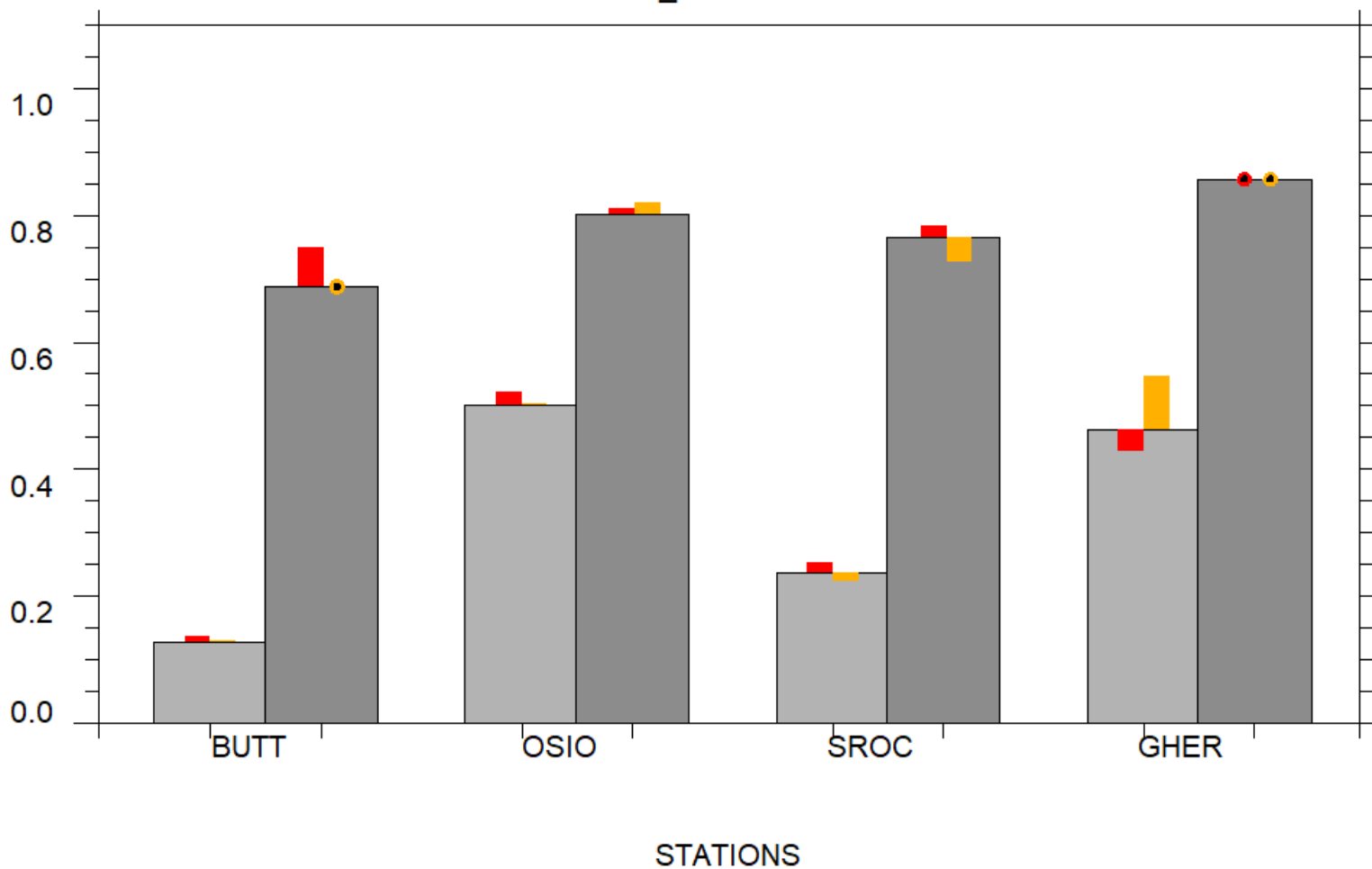Scen: 2005
Extra Values: 50
Season: Year
Day hours: All 24h
Time Average: Preserve
Daily stats: Mean
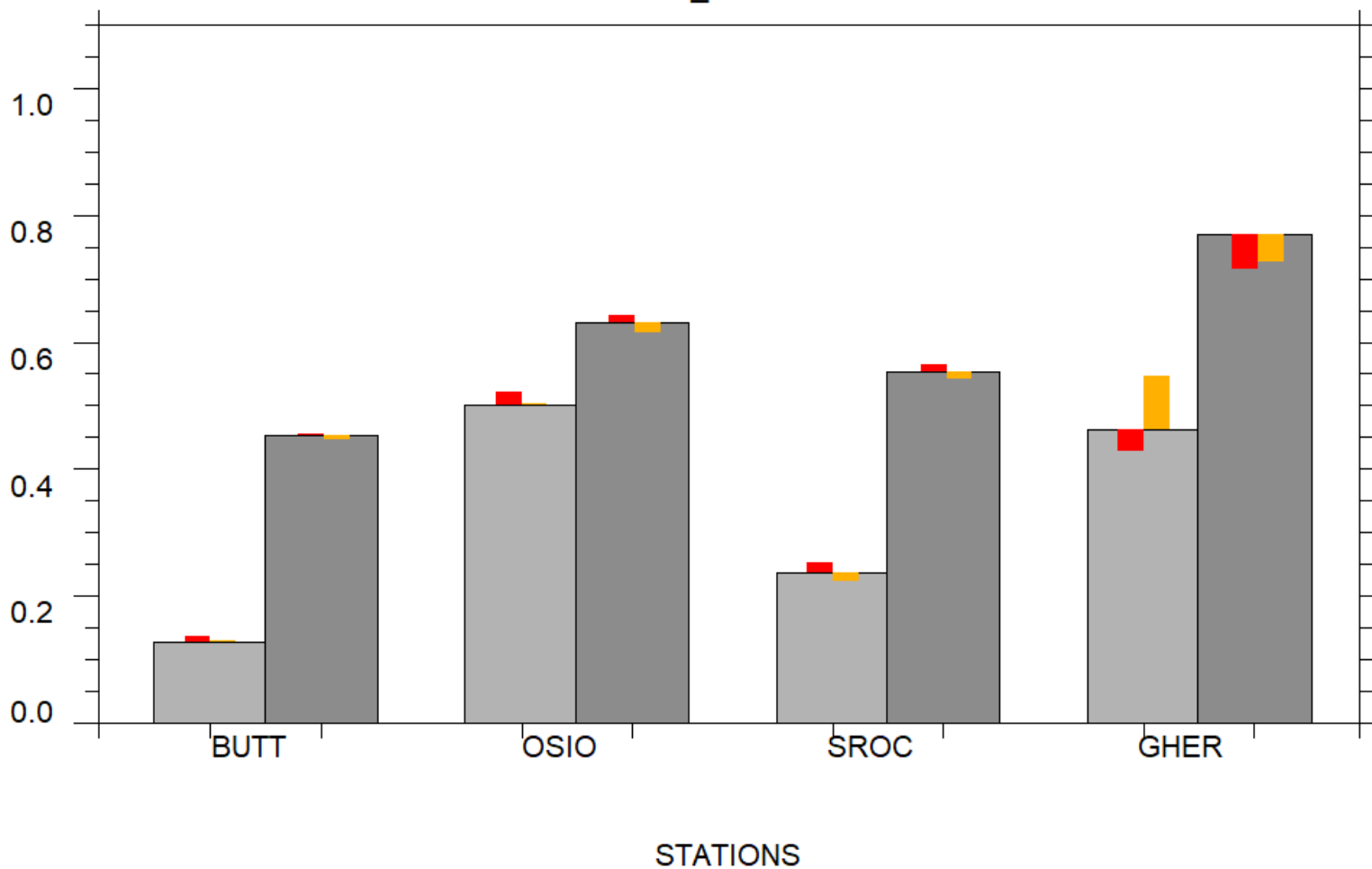
EXERCISE 16

Forecast_POD   PM10

Units: [1]

STATIONS

Threshold Sensitivity -1 Unit   □ MOD1   ■ MOD2
Threshold Sensitivity +1 Unit   □ =0   □ =0
● = 0   ■ =0/0 (NaN)   ■ =0/0 (NaN)
✕ = 0/0 (NaN)

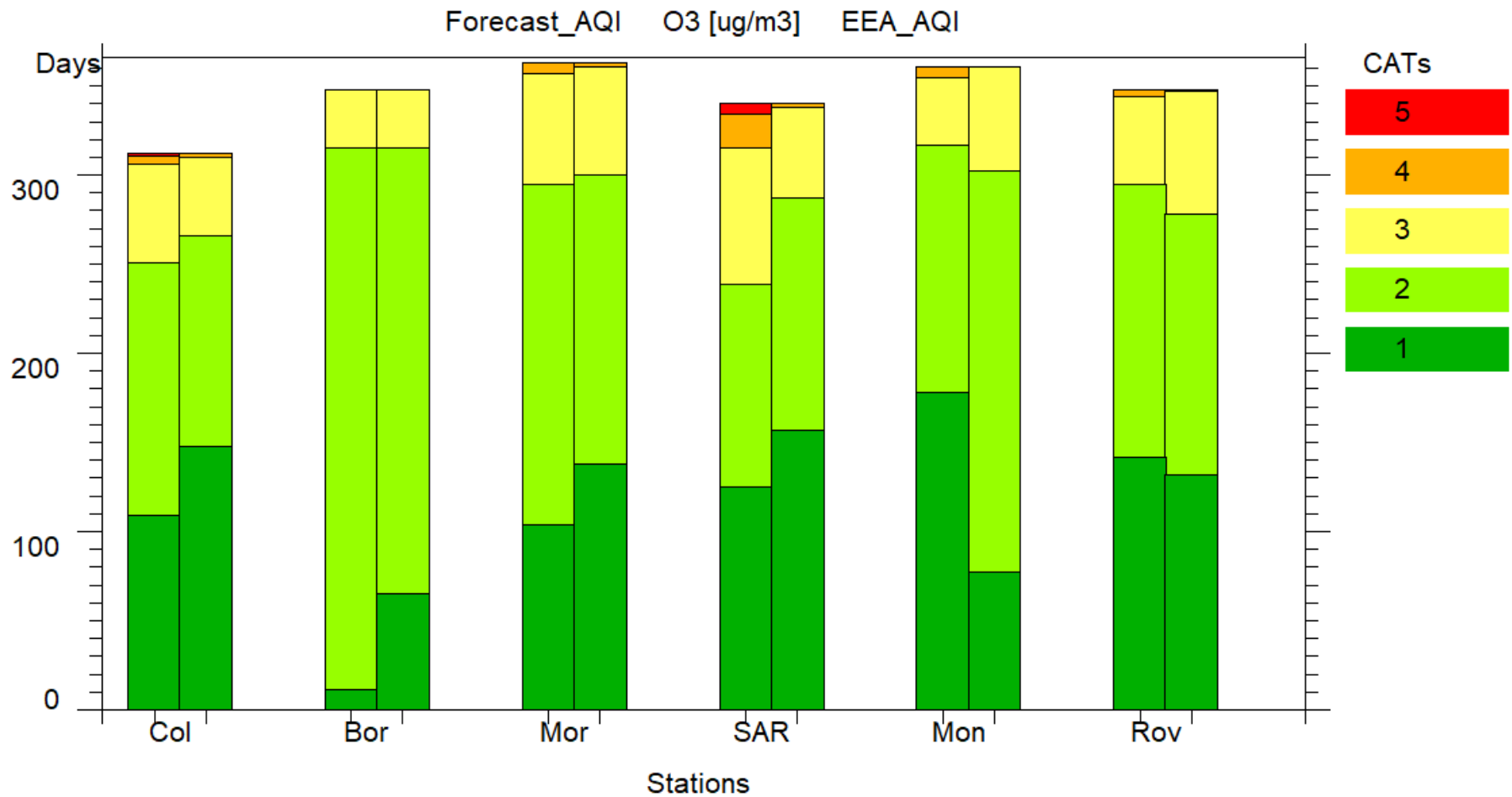Strt/end Ind: 1-8760
Parameter: PM10
Scen: 2005
Extra Values: 50
Season: Year
Day hours: All 24h
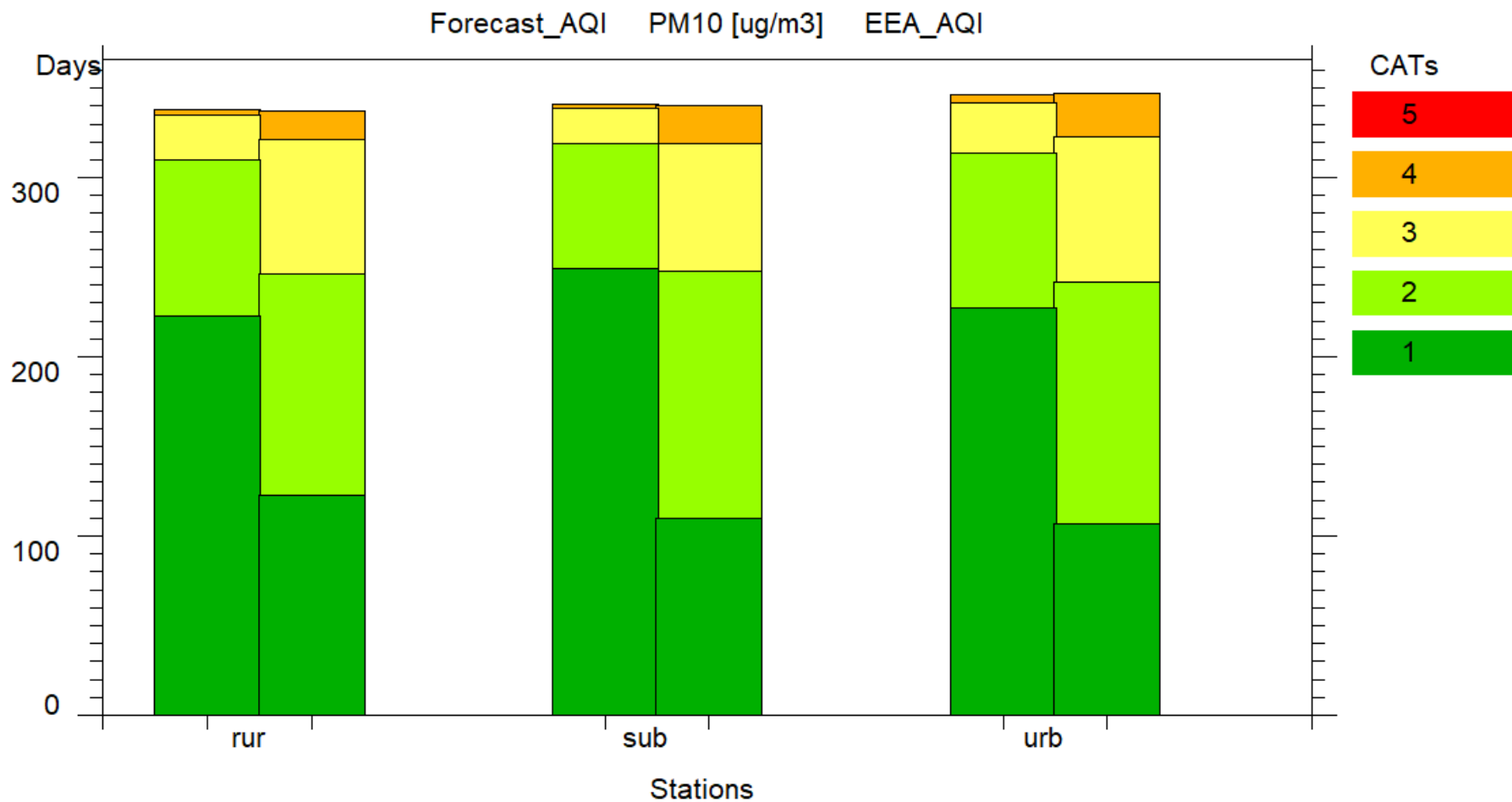Time Average: Preserve
Daily stats: Mean

EXERCISE 17

Forecast_AQI   O3 [ug/m3]   EEA_AQI

CATs

5	(red)
4	(orange)
3	(yellow)
2	(light green)
1	(dark green)

Days

Stations

Col   Bor   Mor   SAR   Mon   Rov

SubBars: M O:

EEA_AQI:

Cat5: Very Poor:	240.0 --- 5000.0	
Cat4: Poor:	180.0 --- 240.0	
Cat3: Medium:	120.0 --- 180.0	
Cat2: Good:	60.0 --- 120.0	
Cat1: Very Good:	0.0 --- 60.0	

Strt/end Ind: 1-8760
Model (s): MOD2
Parameter: O3
Scen: 2005
Extra Values: No
Season: Year
Day hours: All 24h
Time Average: 8h
Daily stats: Max

EXERCISE 18

Forecast_AQI   PM10 [ug/m3]   EEA_AQI

SubBars: M O:		EEA_AQI:				Strt/end Ind: 1-8760
			Cat5: Very Poor:	180.0 --- 5000.0		Station: -1
			Cat4: Poor:	90.0 --- 180.0		Model (s): MOD1
			Cat3: Medium:	50.0 --- 90.0		Parameter: PM10
			Cat2: Good:	25.0 --- 50.0		Scen: 2005
			Cat1: Very Good:	0.0 --- 25.0		Extra Values: No
						Season: Year
						Day hours: All 24h
						Time Average: Preserve