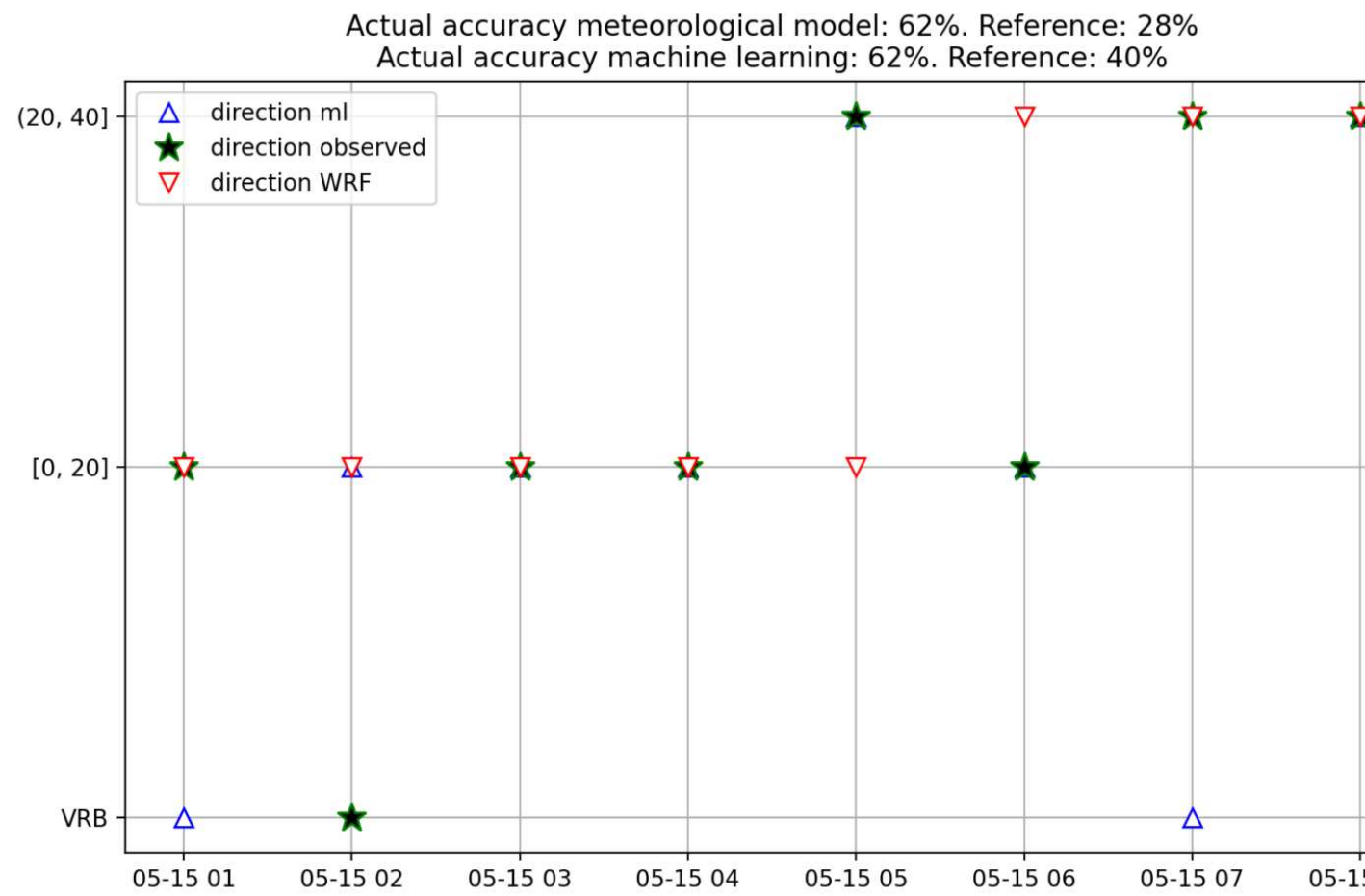
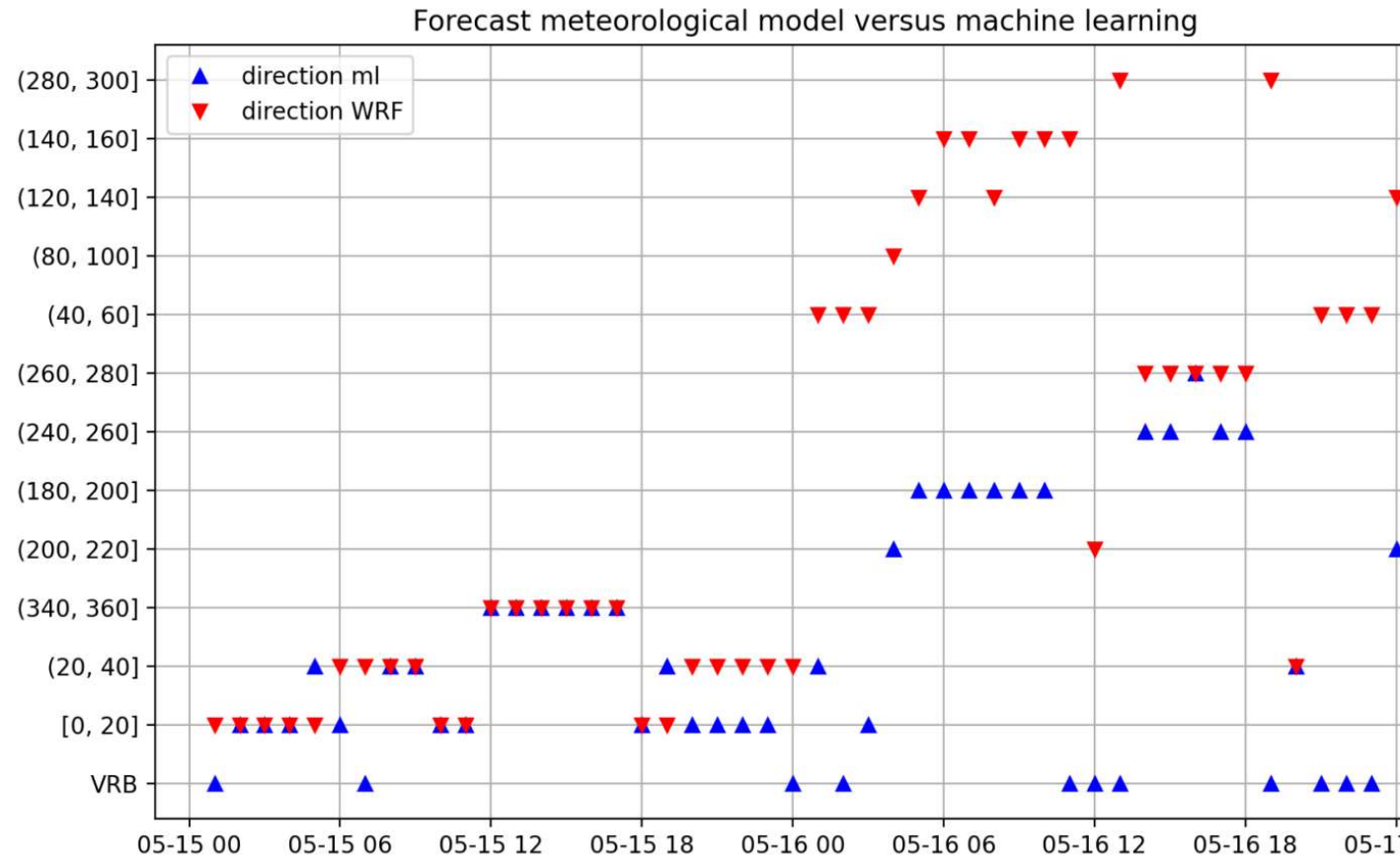


Metars

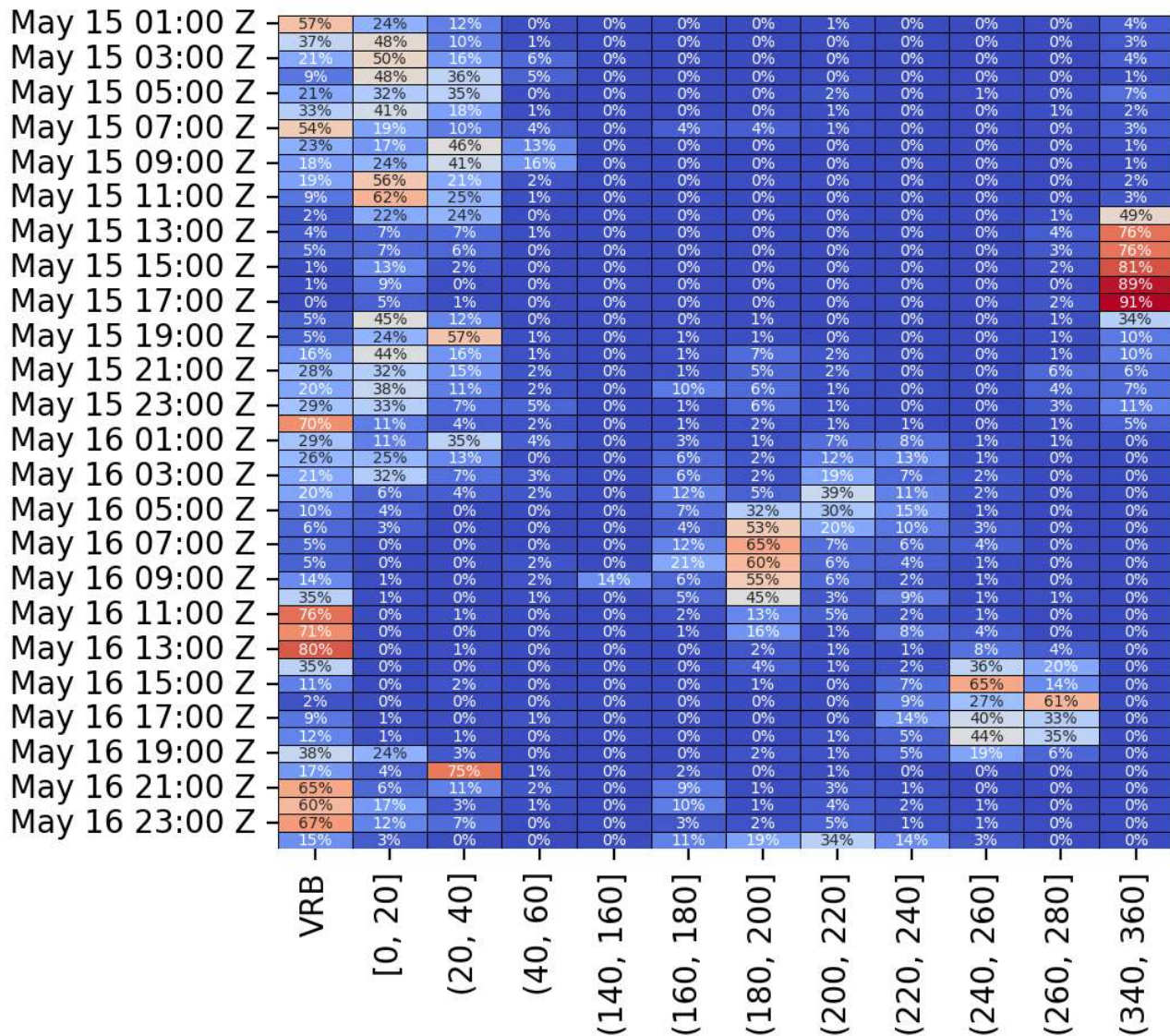
metar_o	dir_o	spd_o	gust_o	visibility_o	wxcodes_o	skyc1_o	sky11
LEVX 150250Z 04002KT CAVOK 12/10 Q1022 NOSIG	40.00	2	M	9994	M	M	M
LEVX 150300Z 01006KT 350V050 CAVOK 12/10 Q1022 NOSIG	10.00	6	M	9994	M	M	M
LEVX 150330Z 03005KT 350V060 CAVOK 11/10 Q1022 NOSIG	30.00	5	M	9994	M	M	M
LEVX 150400Z 02006KT CAVOK 12/10 Q1022 NOSIG	20.00	6	M	9994	M	M	M
LEVX 150430Z 03005KT 350V070 9999 SCT054 12/10 Q1022 NOSIG	30.00	5	M	9994	M	SCT	5400.
LEVX 150500Z 03004KT 350V080 9999 SCT054 12/10 Q1022 NOSIG	30.00	4	M	9994	M	SCT	5400.
LEVX 150530Z 04003KT 310V110 9999 FEW054 12/10 Q1022 NOSIG	40.00	3	M	9994	M	FEW	5400.
LEVX 150600Z 02003KT 330V080 9999 FEW053 12/10 Q1022 NOSIG	20.00	3	M	9994	M	FEW	5300.
LEVX 150630Z 07004KT 020V110 9999 FEW025 12/11 Q1022 NOSIG	70.00	4	M	9994	M	FEW	2500.
LEVX 150700Z 03006KT 330V120 CAVOK 14/09 Q1022 NOSIG	30.00	6	M	9994	M	M	M
LEVX 150730Z 06005KT 010V120 CAVOK 15/11 Q1022 NOSIG	60.00	5	M	9994	M	M	M
LEVX 150800Z 03007KT 330V100 CAVOK 15/10 Q1022 NOSIG	30.00	7	M	9994	M	M	M
LEVX 150830Z 03008KT 350V070 CAVOK 16/10 Q1022 NOSIG	30.00	8	M	9994	M	M	M

Wind direction





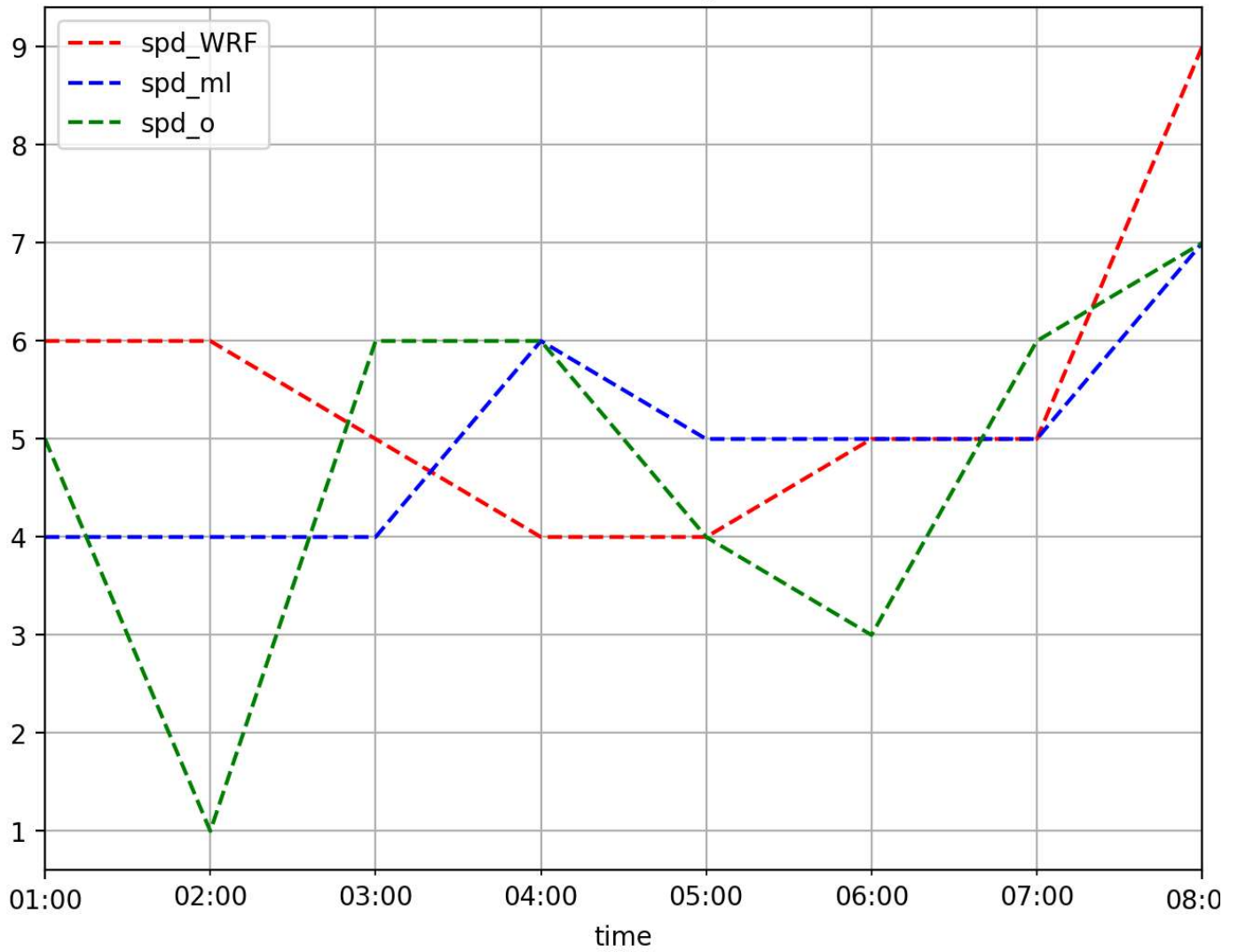
Probabilities wind direction more than 5%

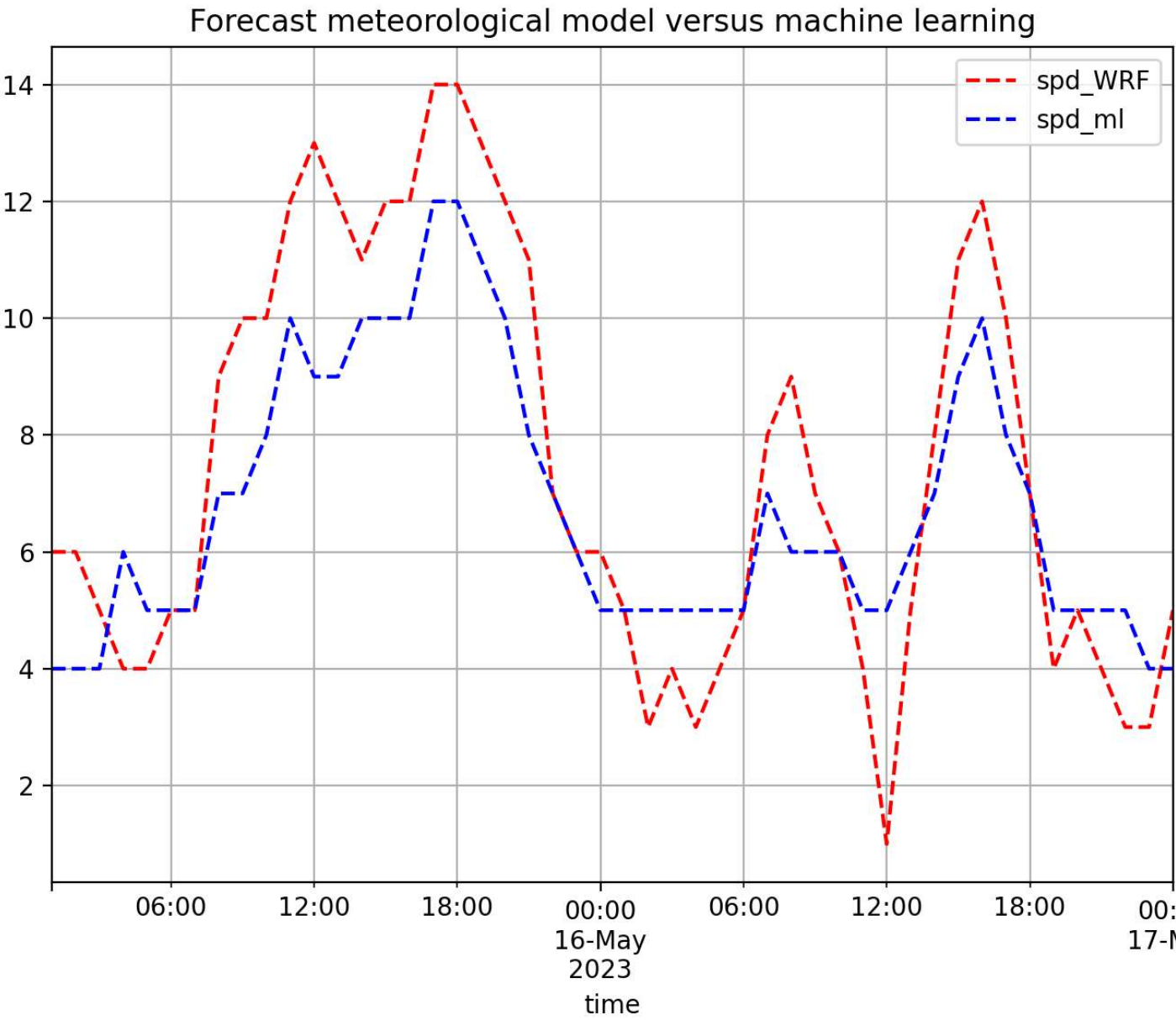


Wind intensity knots

Actual mean absolute error meteorological model (kt): 1.75. Reference (m/s): 1.0

Actual mean absolute error machine learning (kt): 1.25. Reference (m/s): 0.89

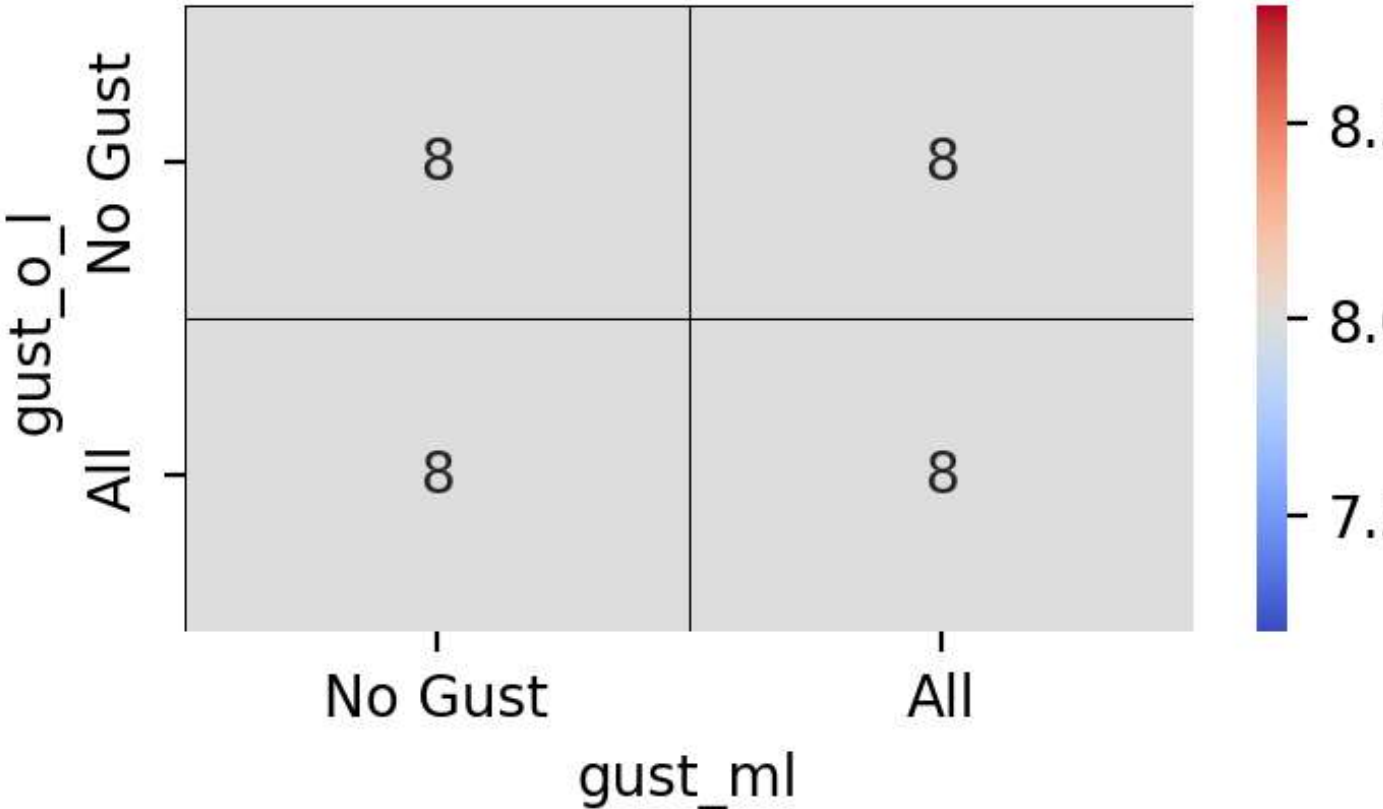




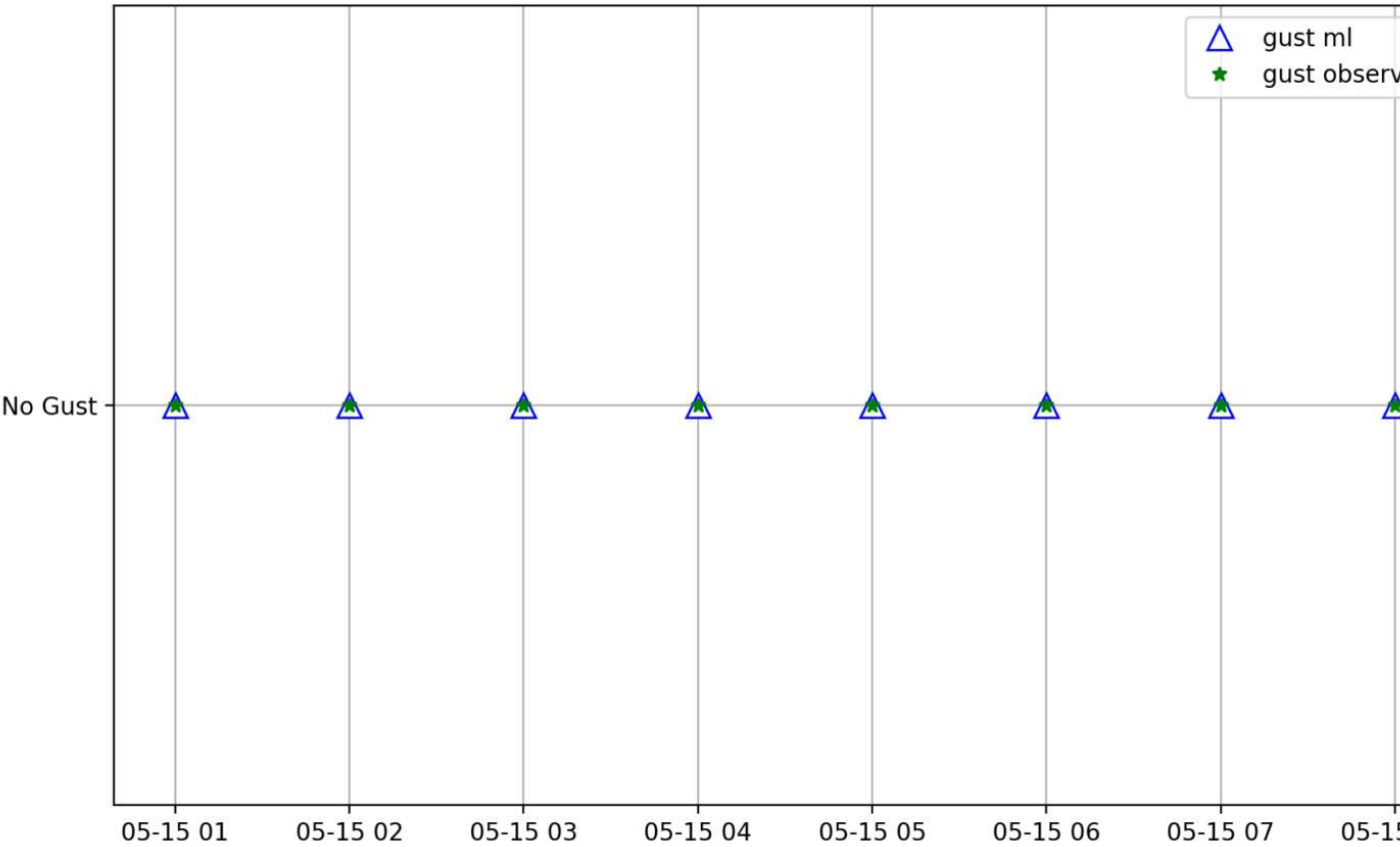
Wind gust

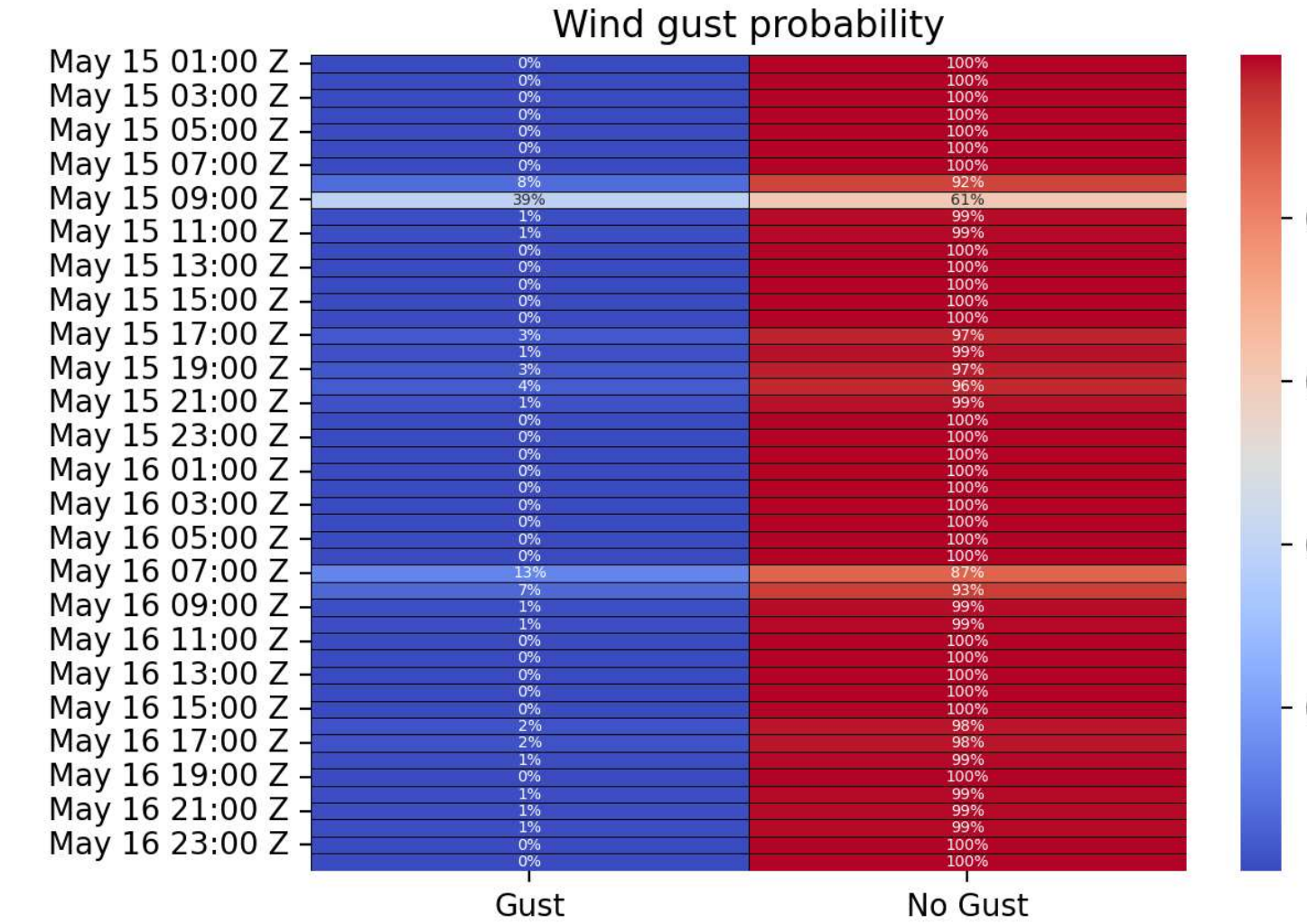
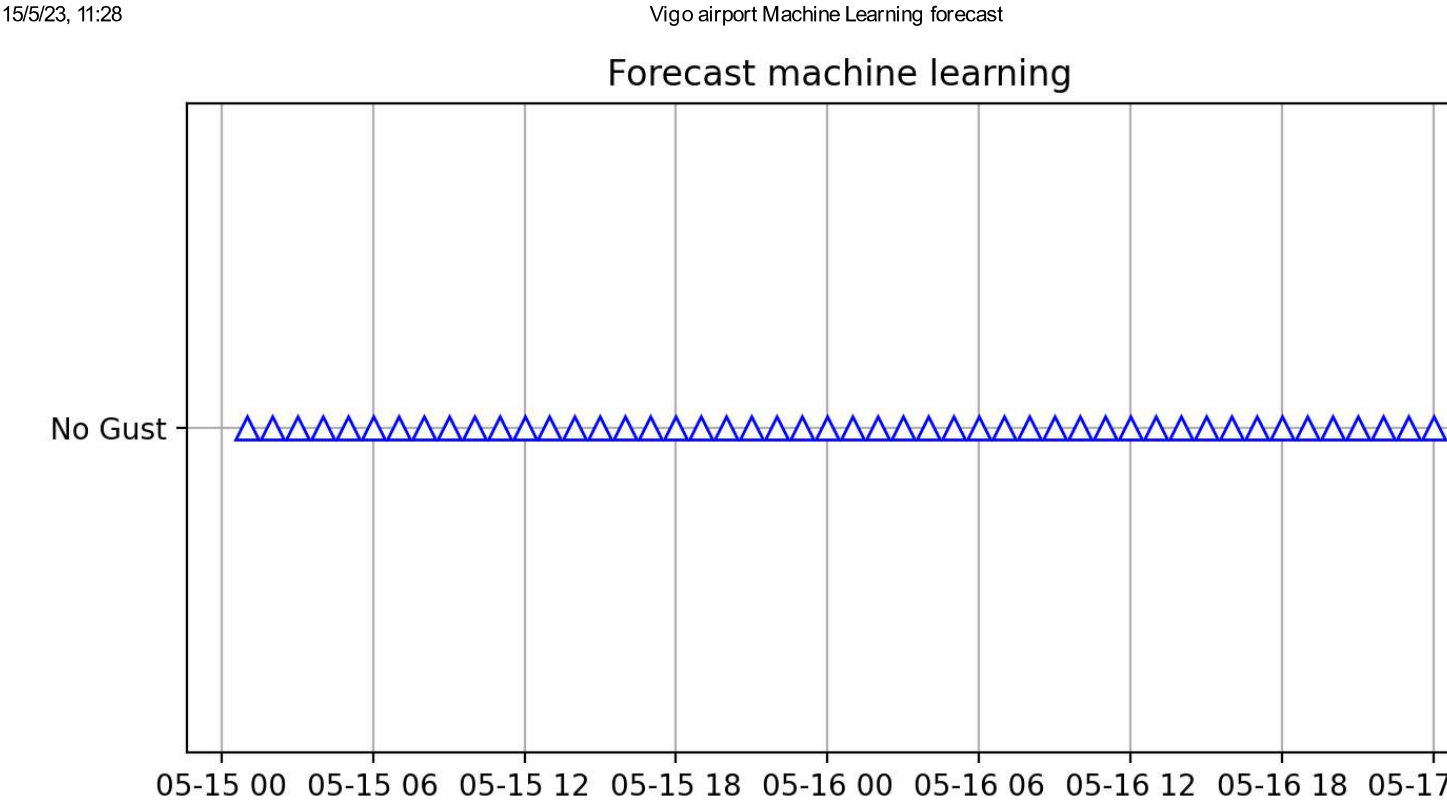
Confusion matrix

Accuracy machine learning: 100%



Actual Heidke skill score: 0. Reference: 0.42

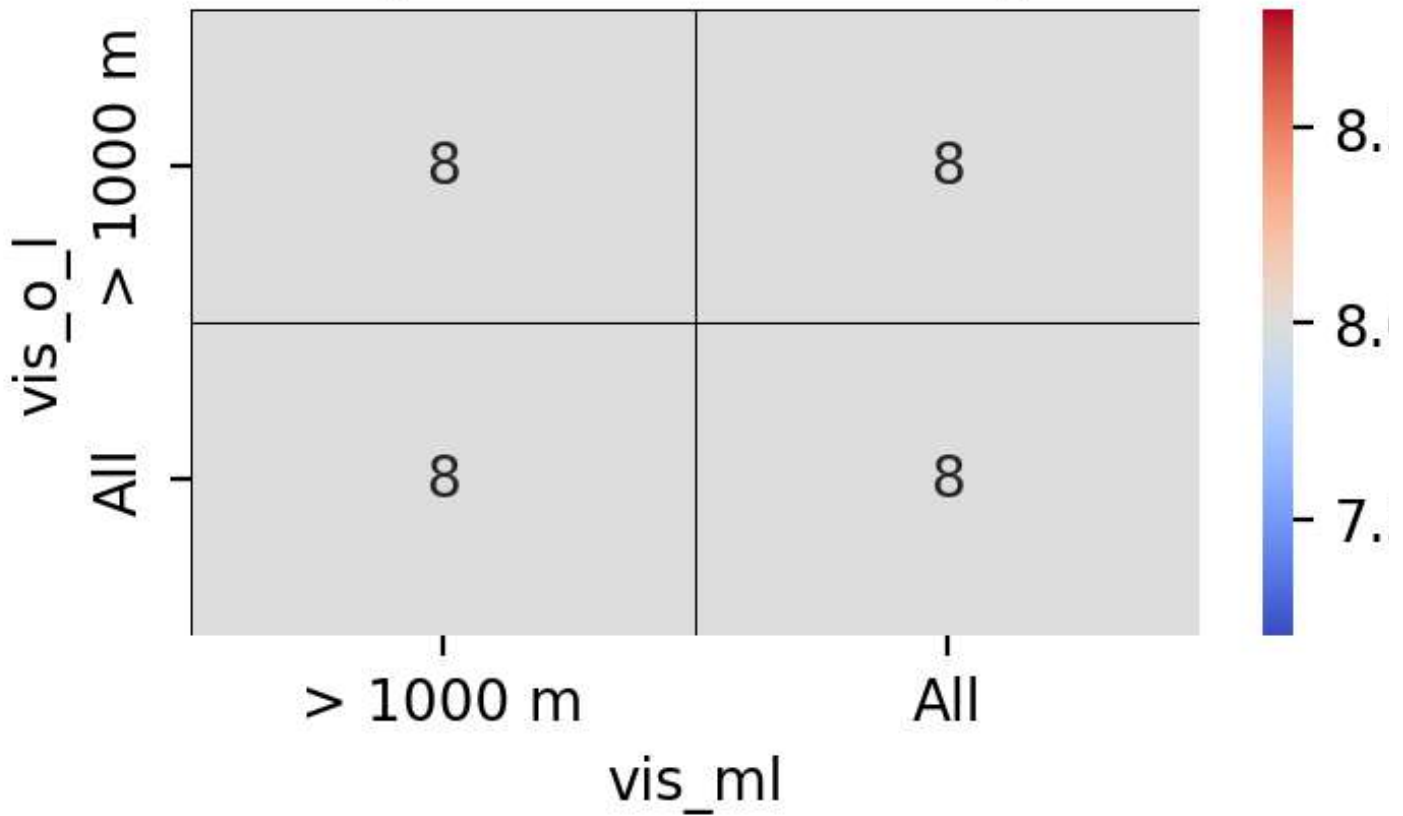




Horizontal visibility

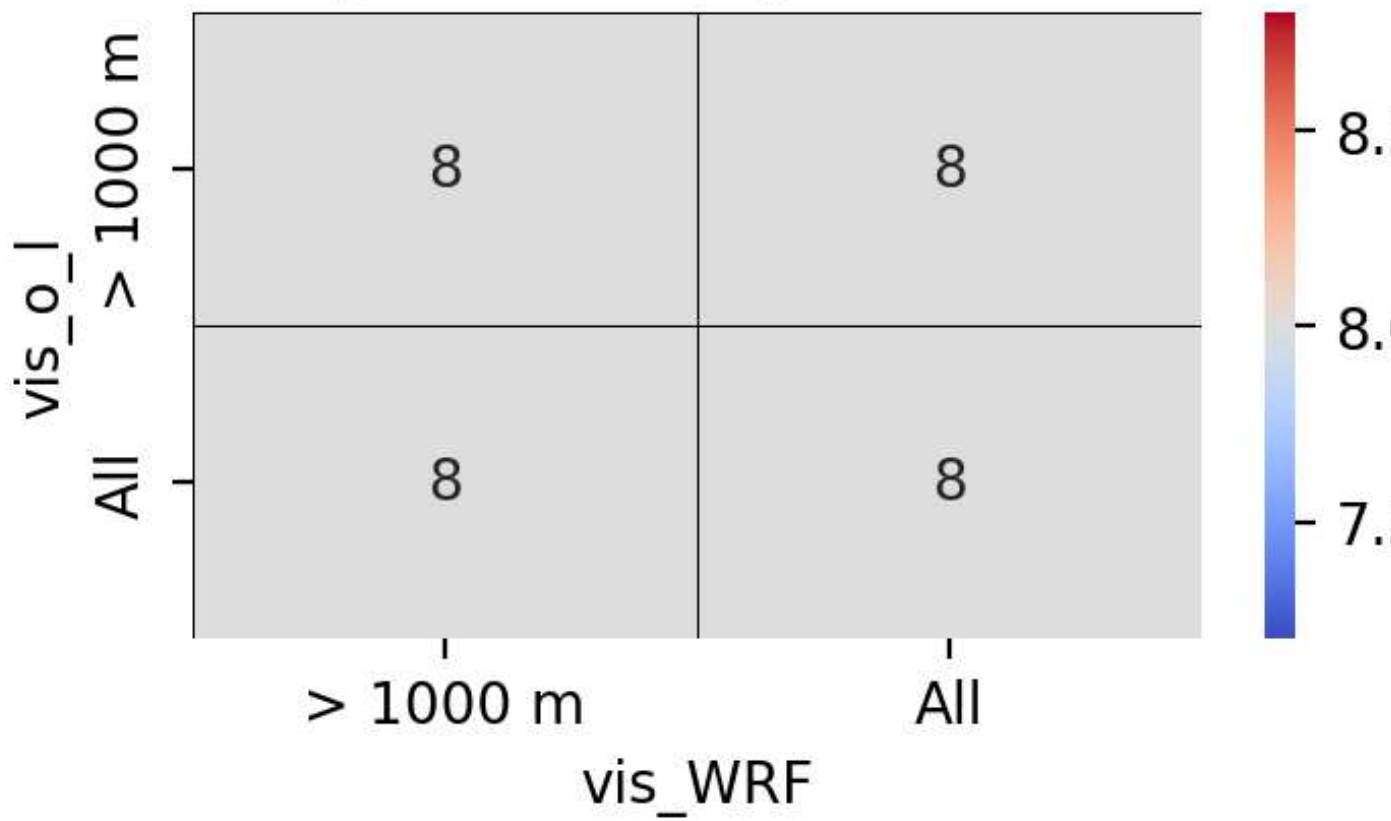
Confusion matrix

Accuracy machine learning: 100%

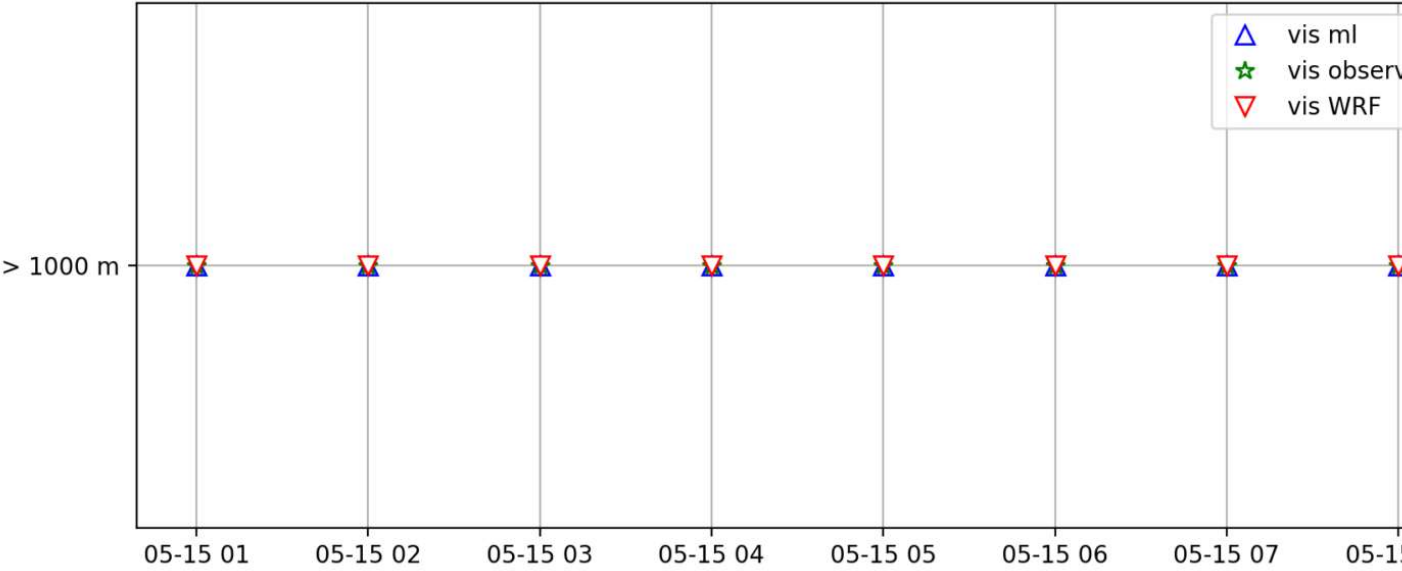


Confusion matrix

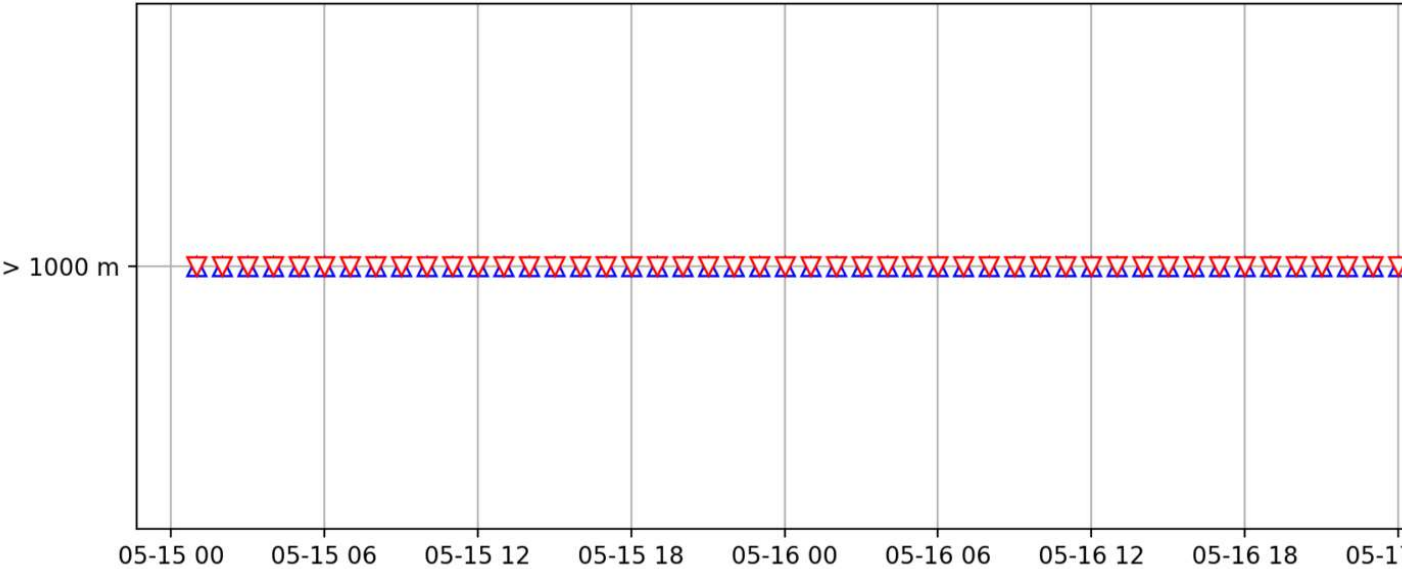
Accuracy meteorologic model: 100%



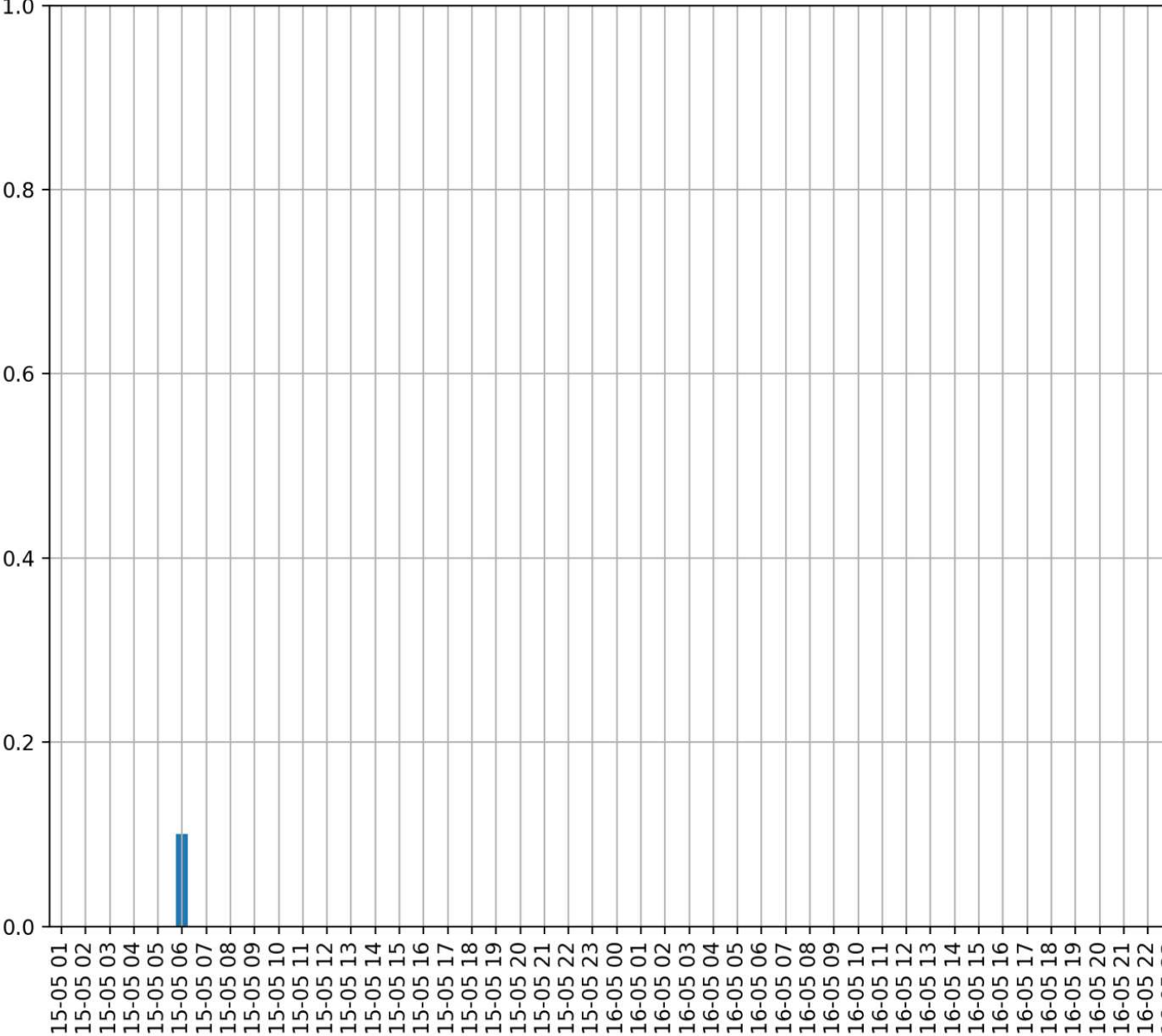
Actual Heidke skill score meteorological model: 0. Reference: 0.25
Actual Heidke skill score machine learning: 0. Reference: 0.52



Forecast machine learning



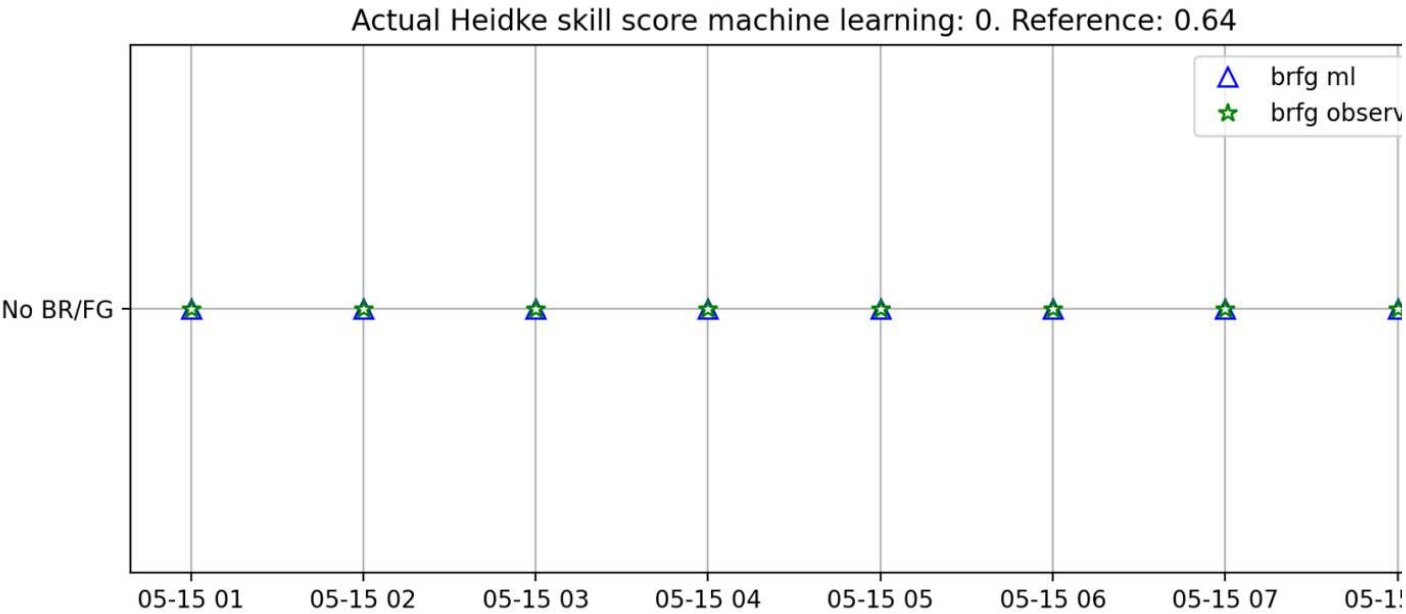
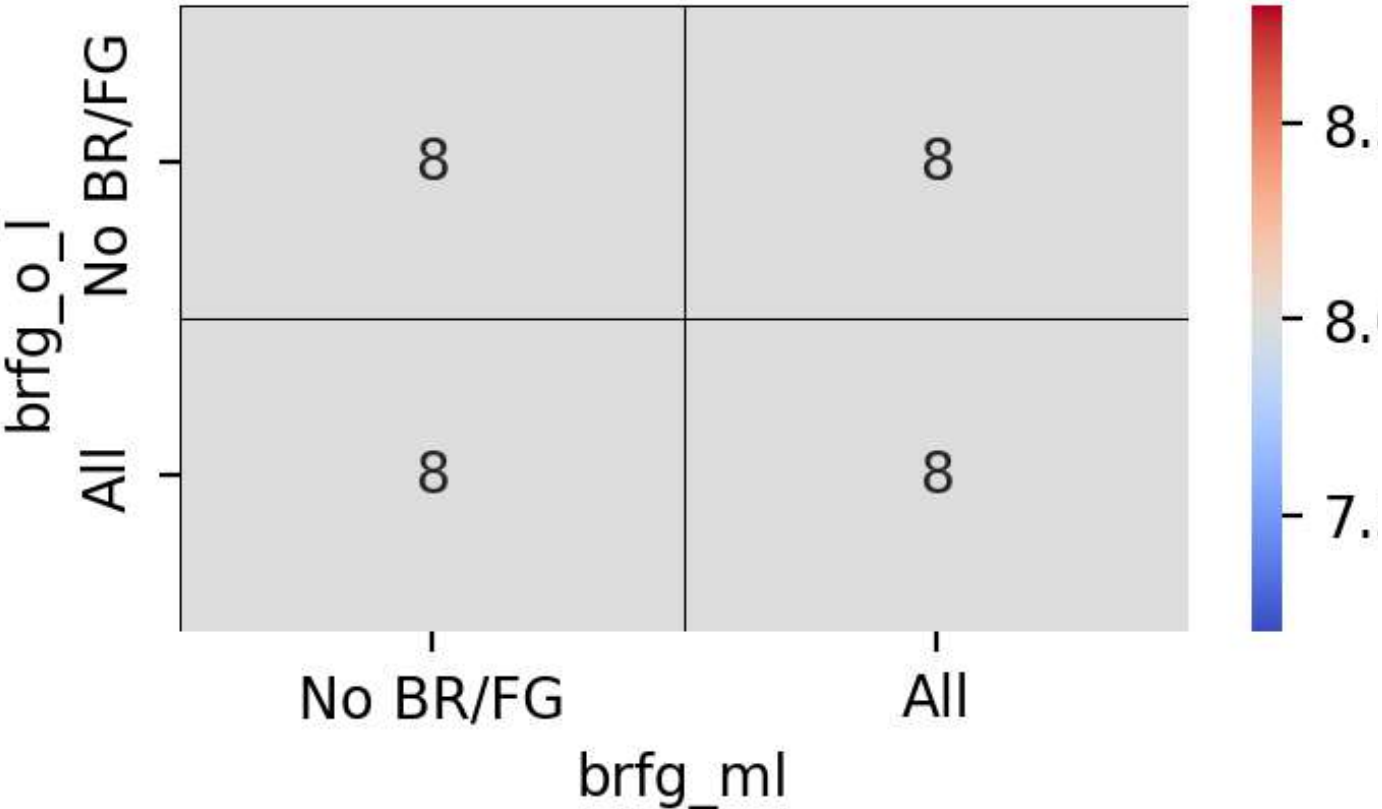
Horizontal visibility below 1000 meters probability



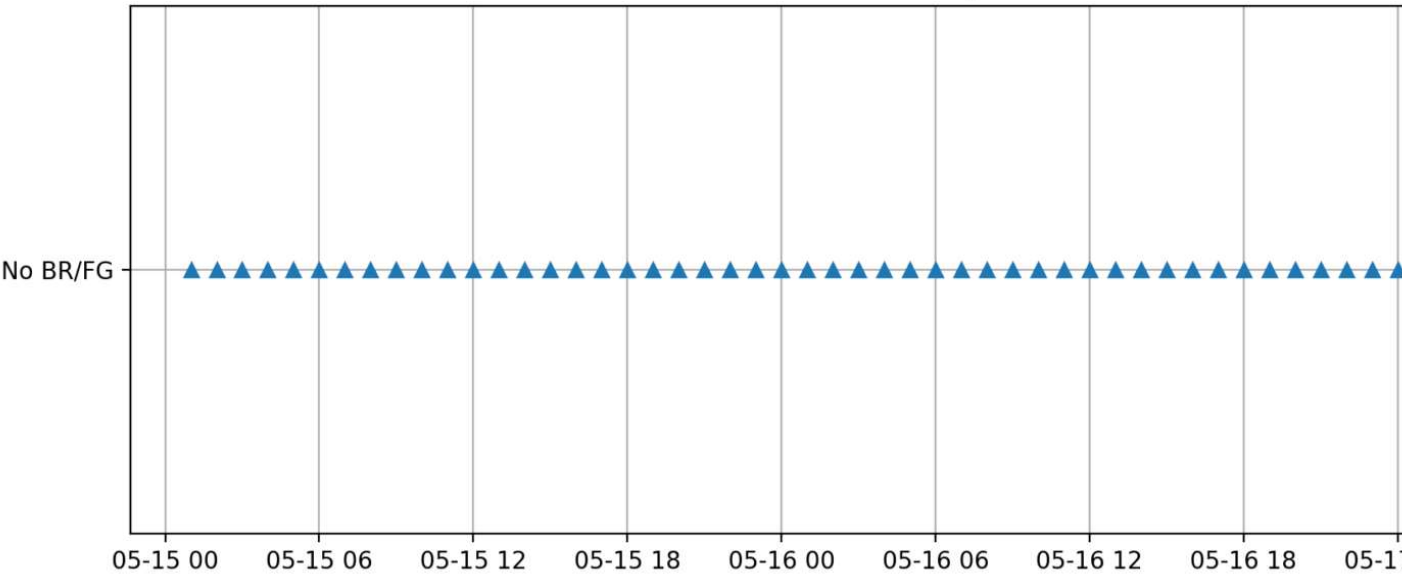
BR or FG

Confusion matrix

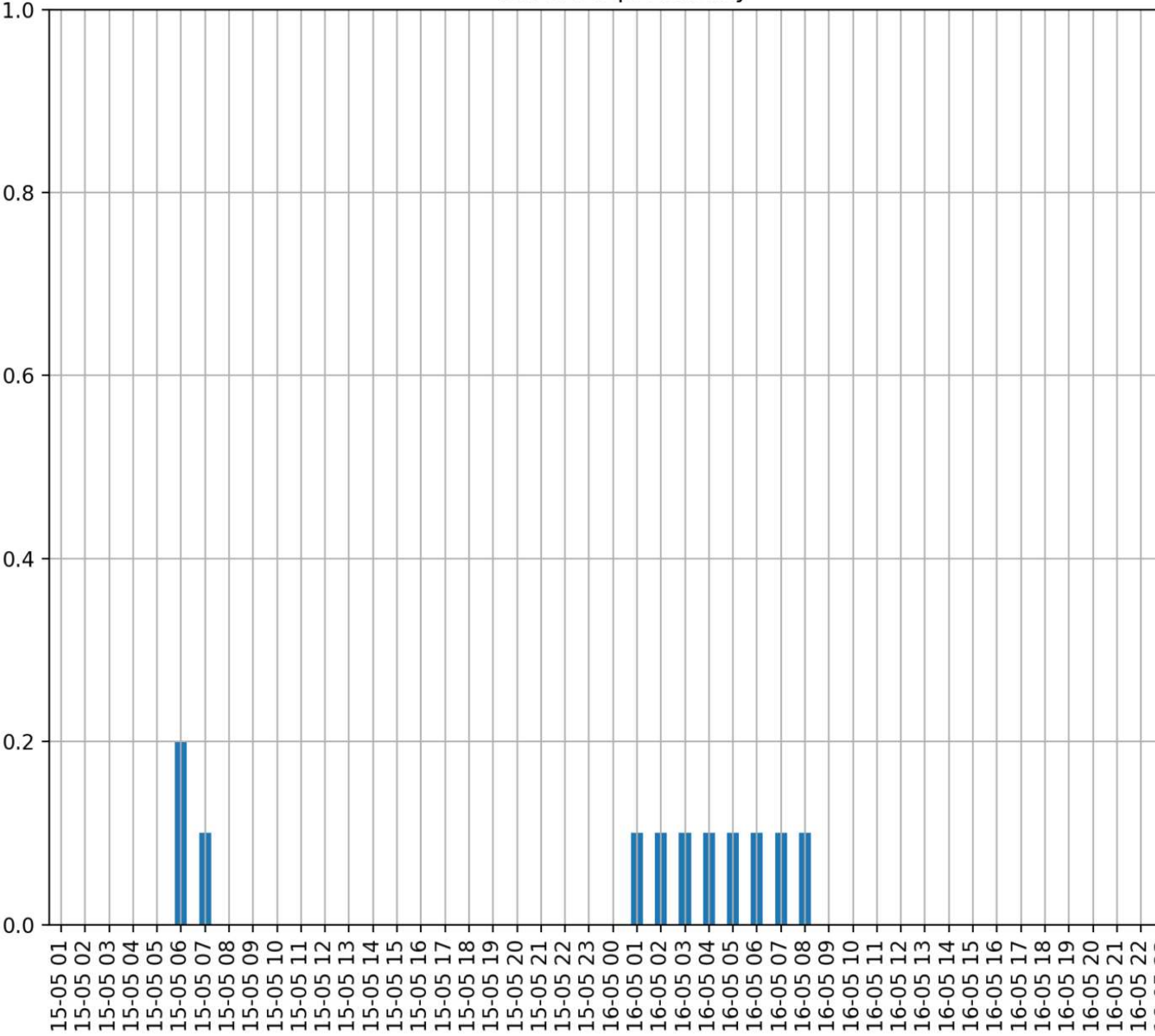
Accuracy machine learning: 100%



Forecast machine learning



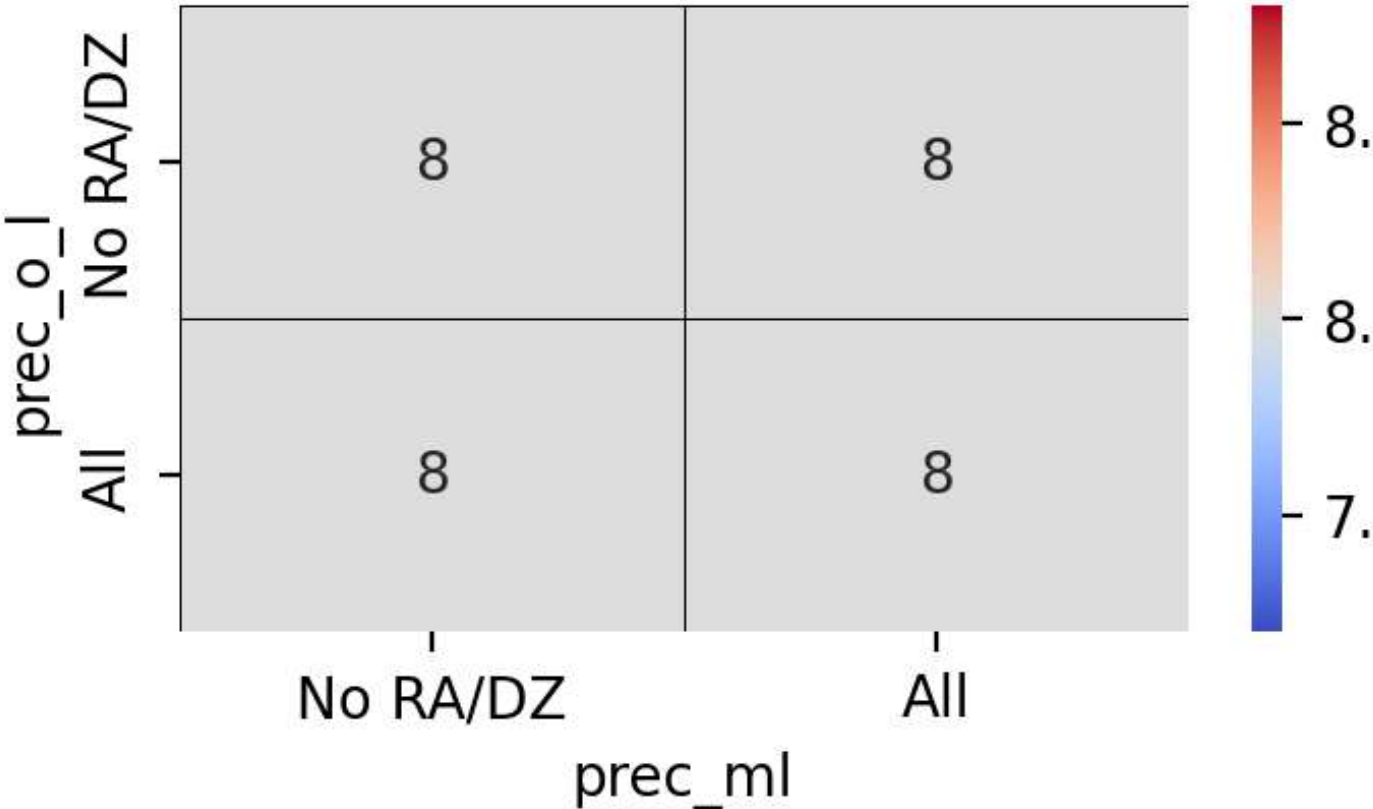
BR or FG probability



Precipitation

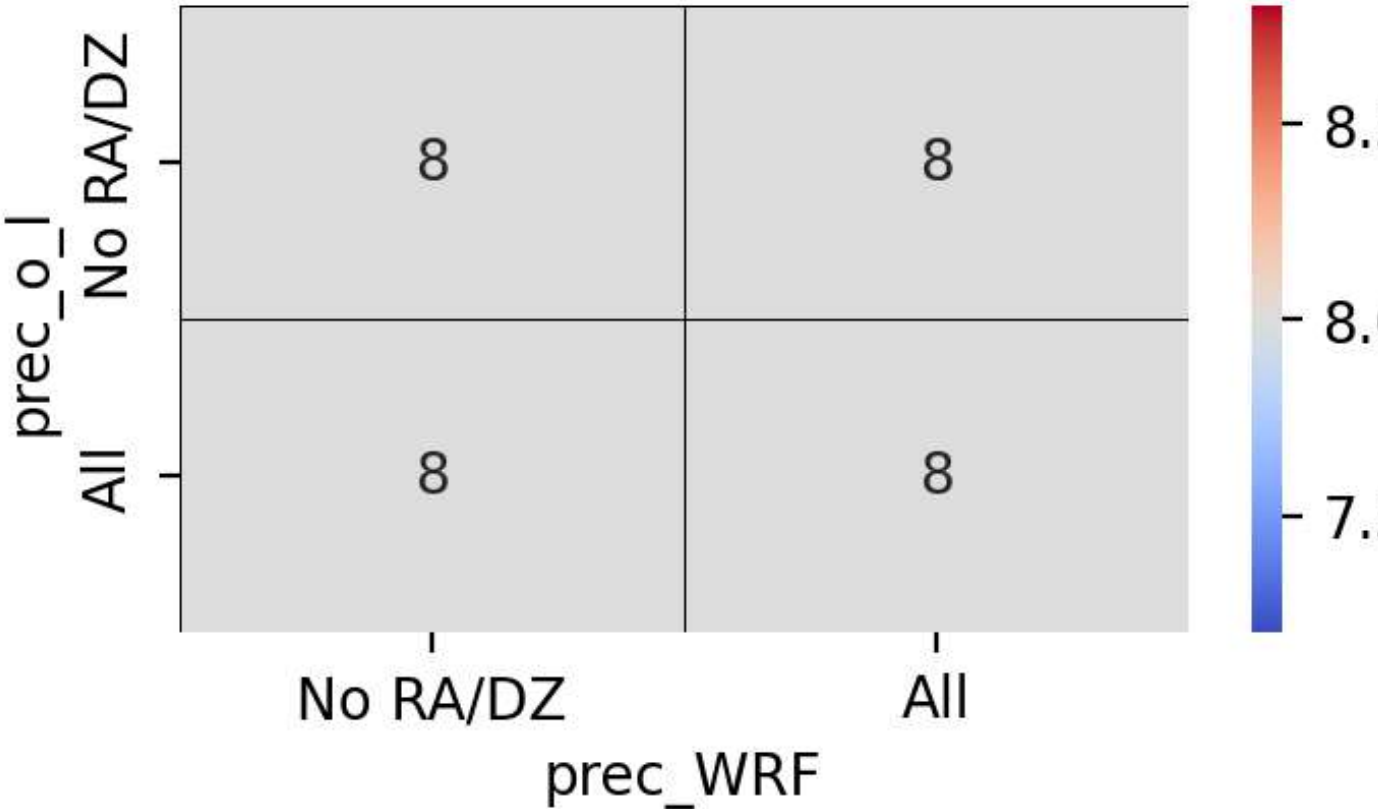
Confusion matrix

Accuracy machine learning: 100%

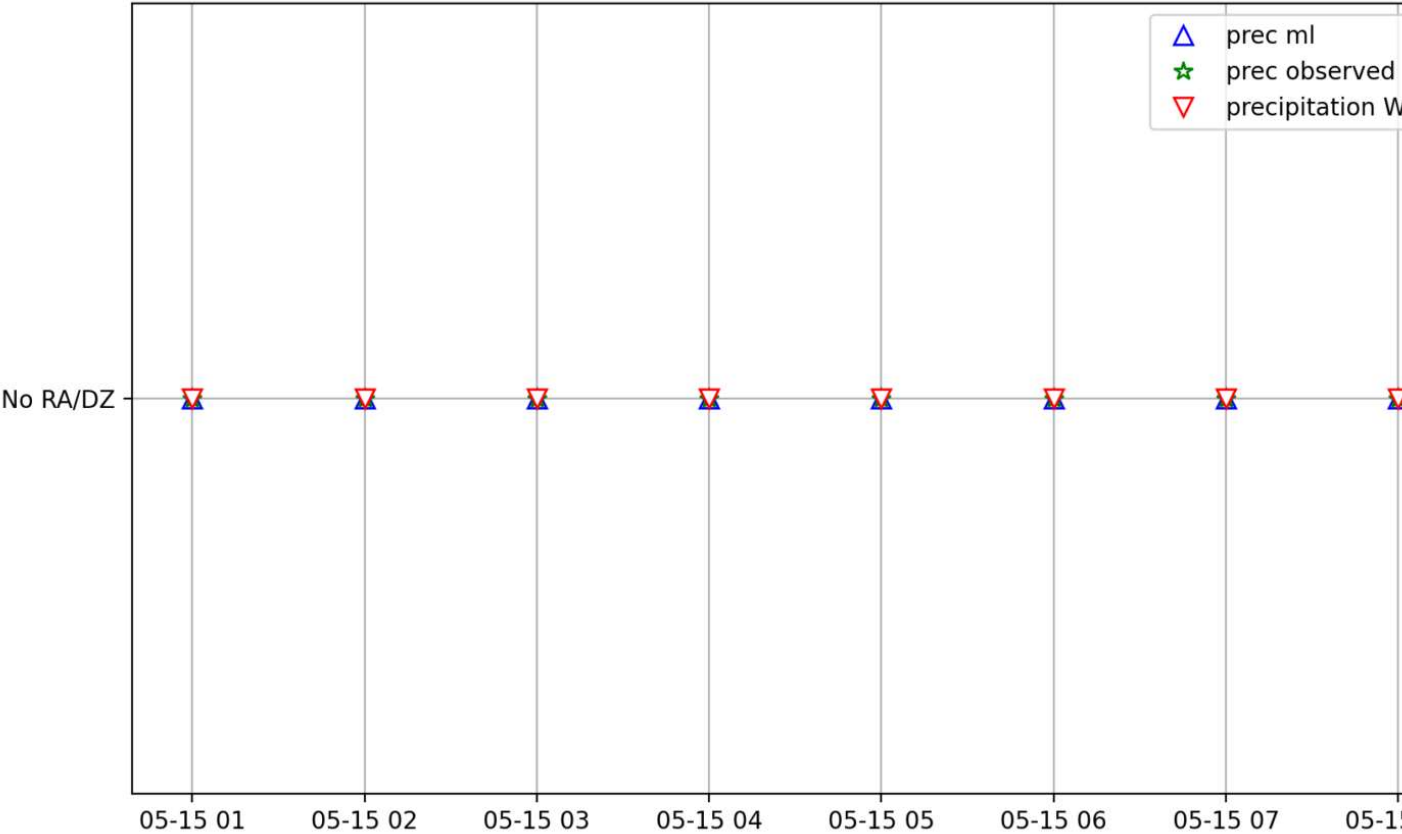


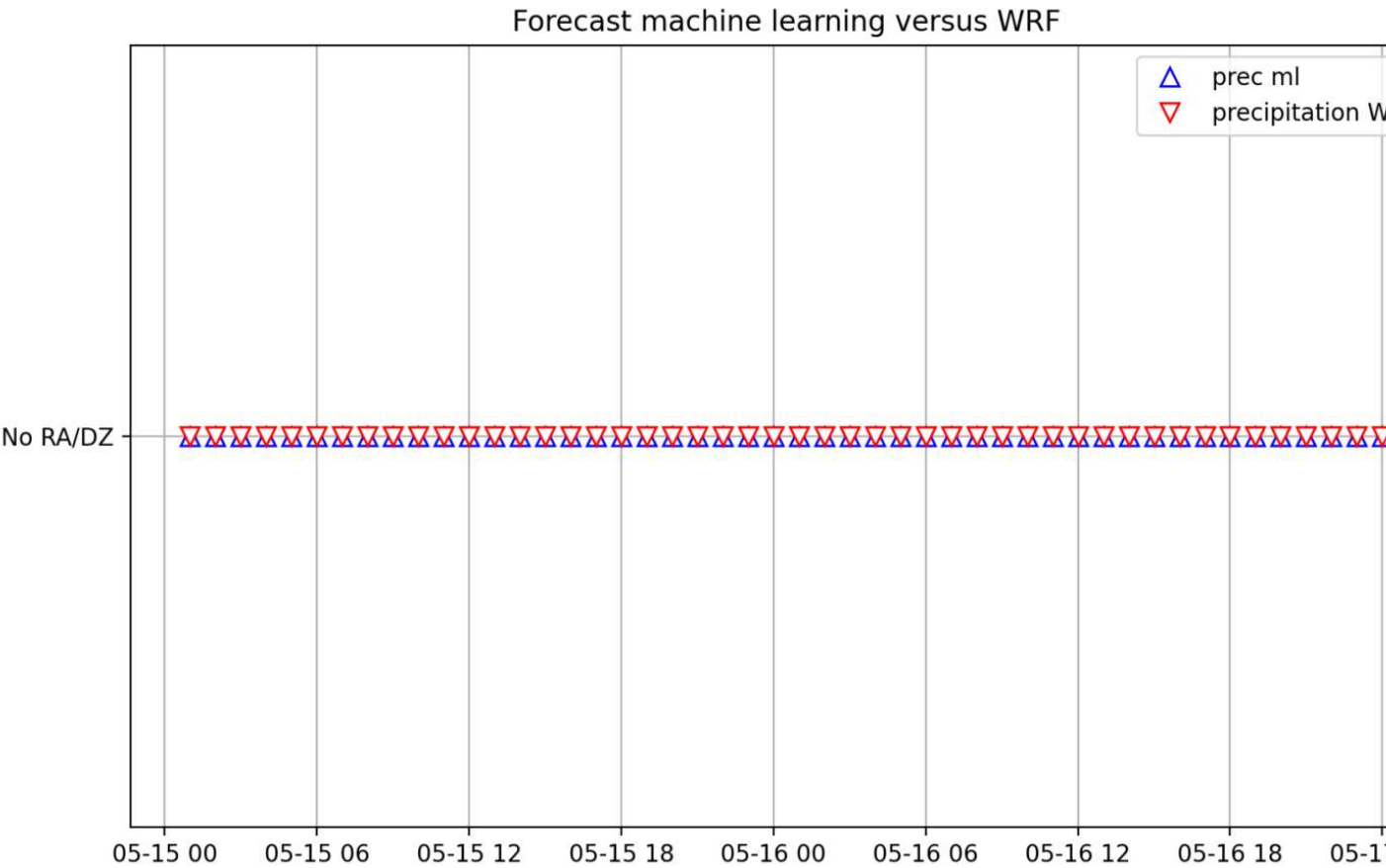
Confusion matrix

Accuracy meteorologic model: 100%

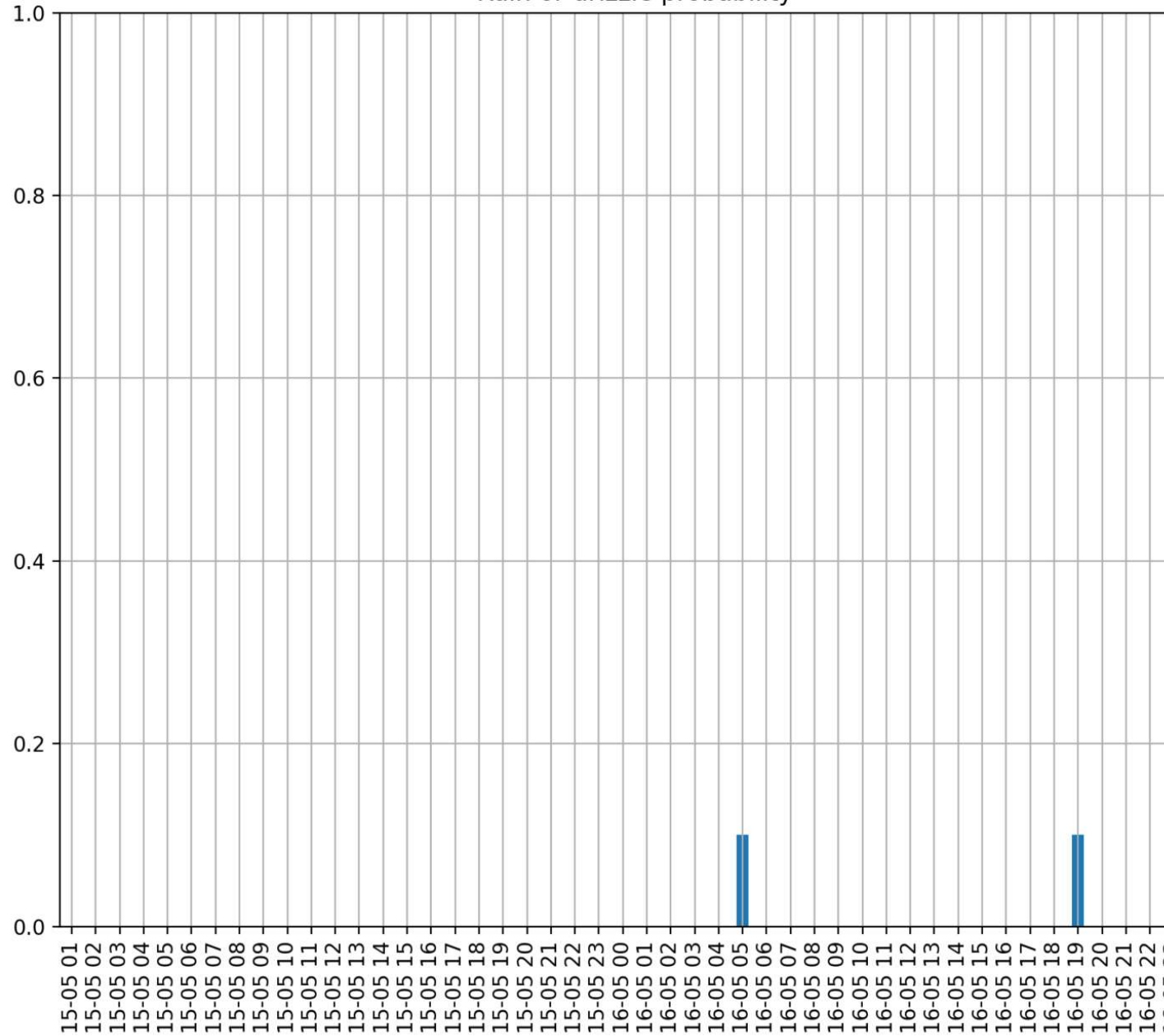


Actual Heidke skill score meteorological model: 0. Reference: 0.43
Actual Heidke skill score machine learning: 0. Reference: 0.55





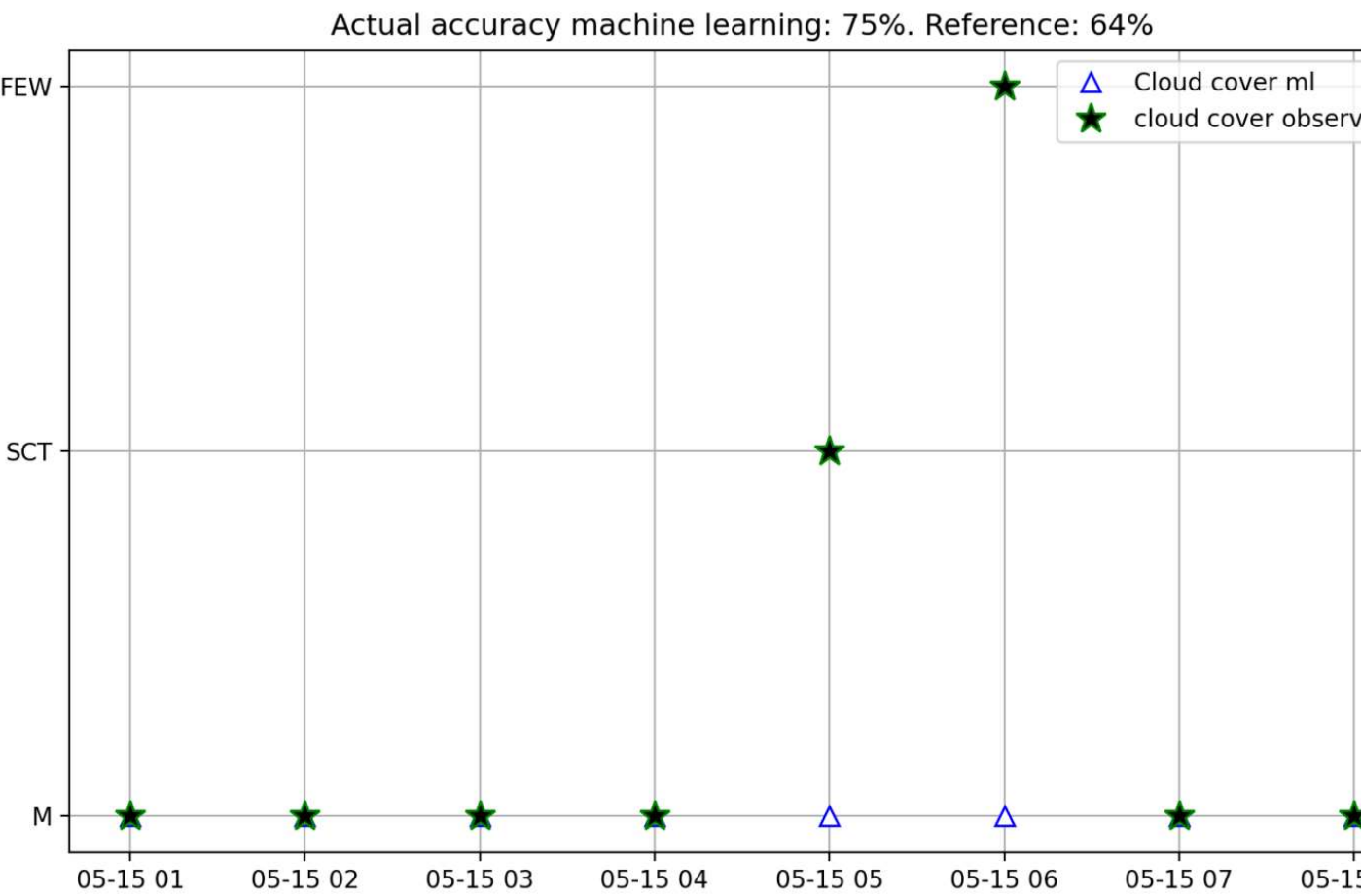
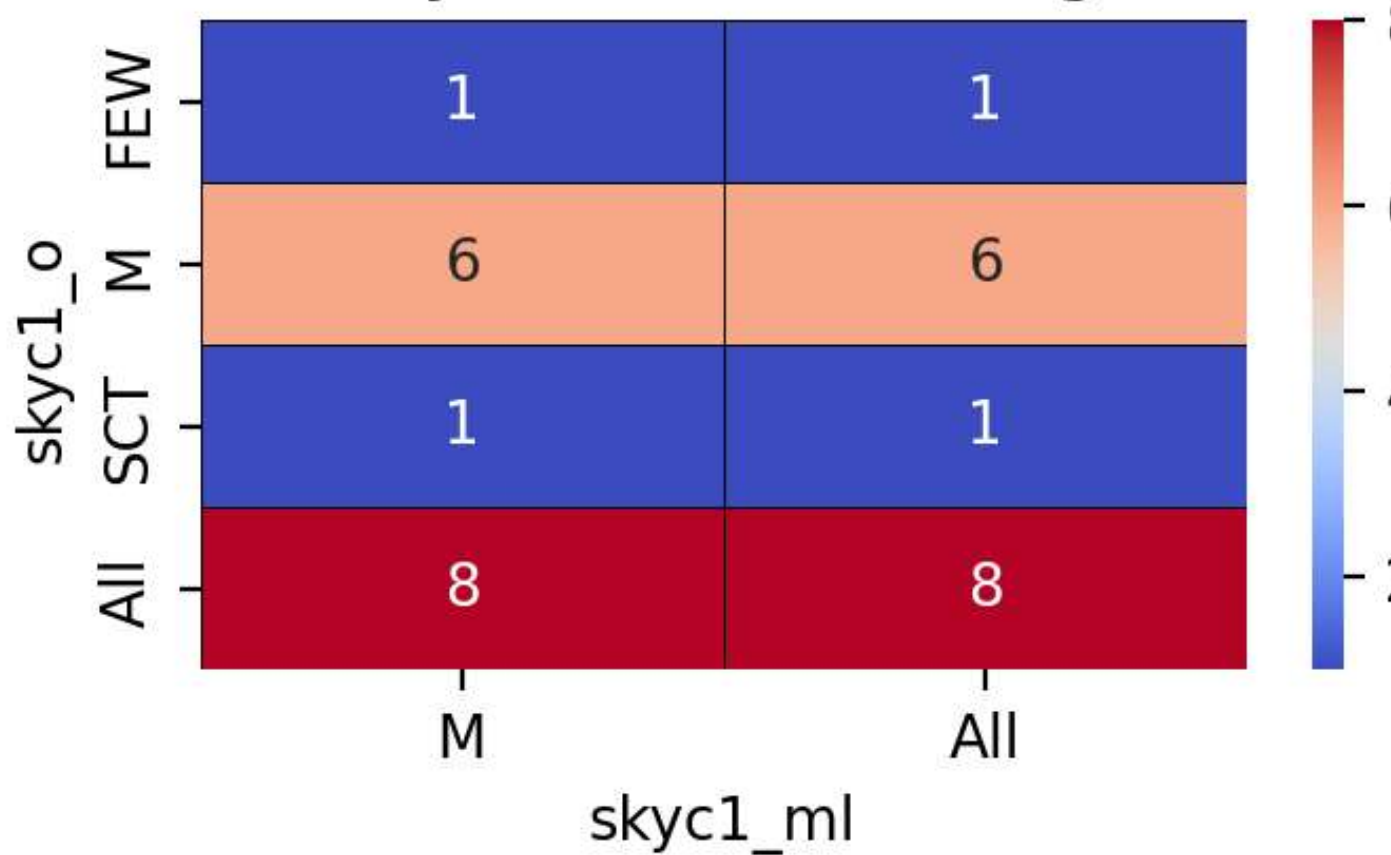
Rain or drizzle probability

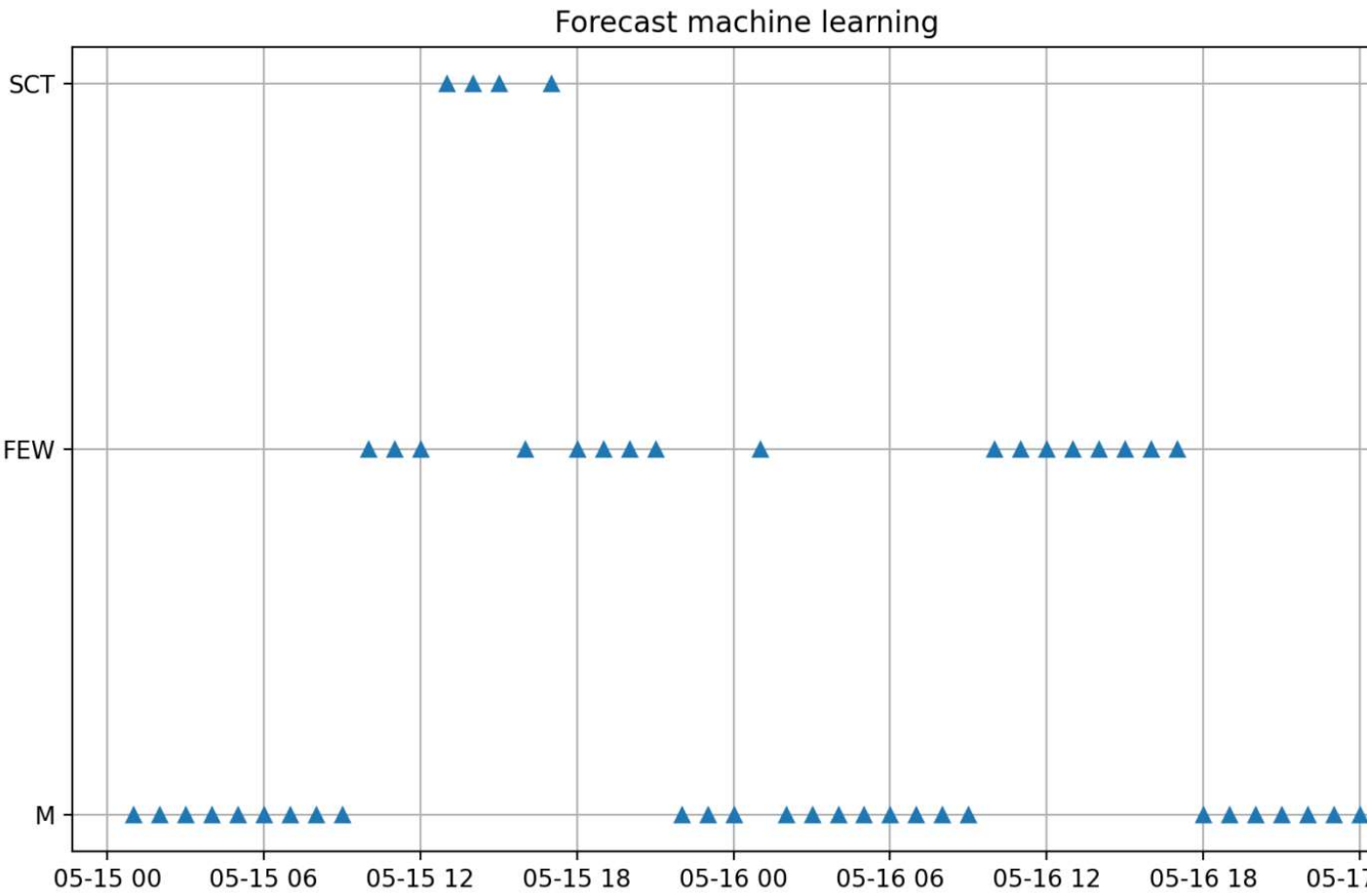


Cloud cover level 1

Confusion matrix

Accuracy machine learning: 75%





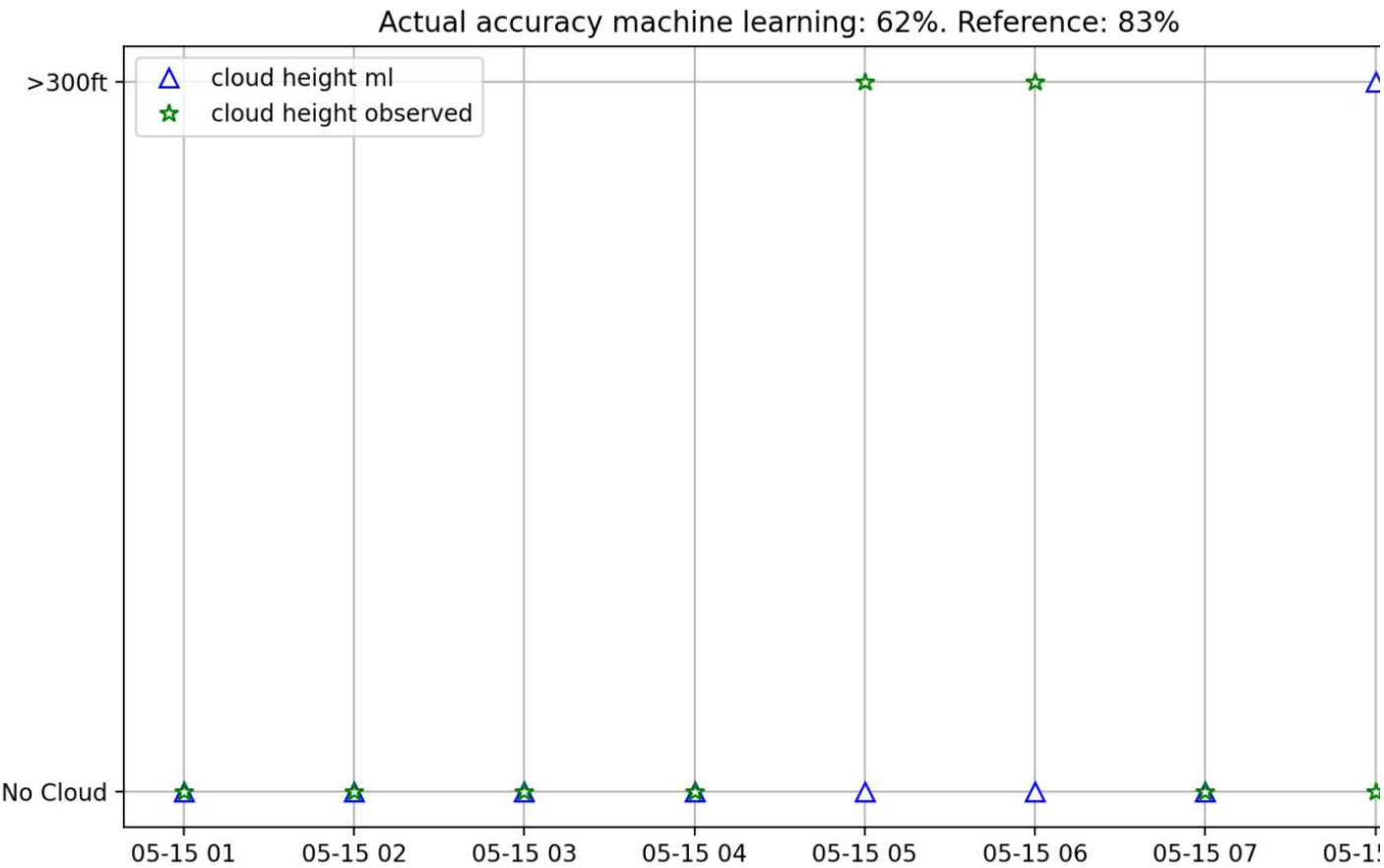
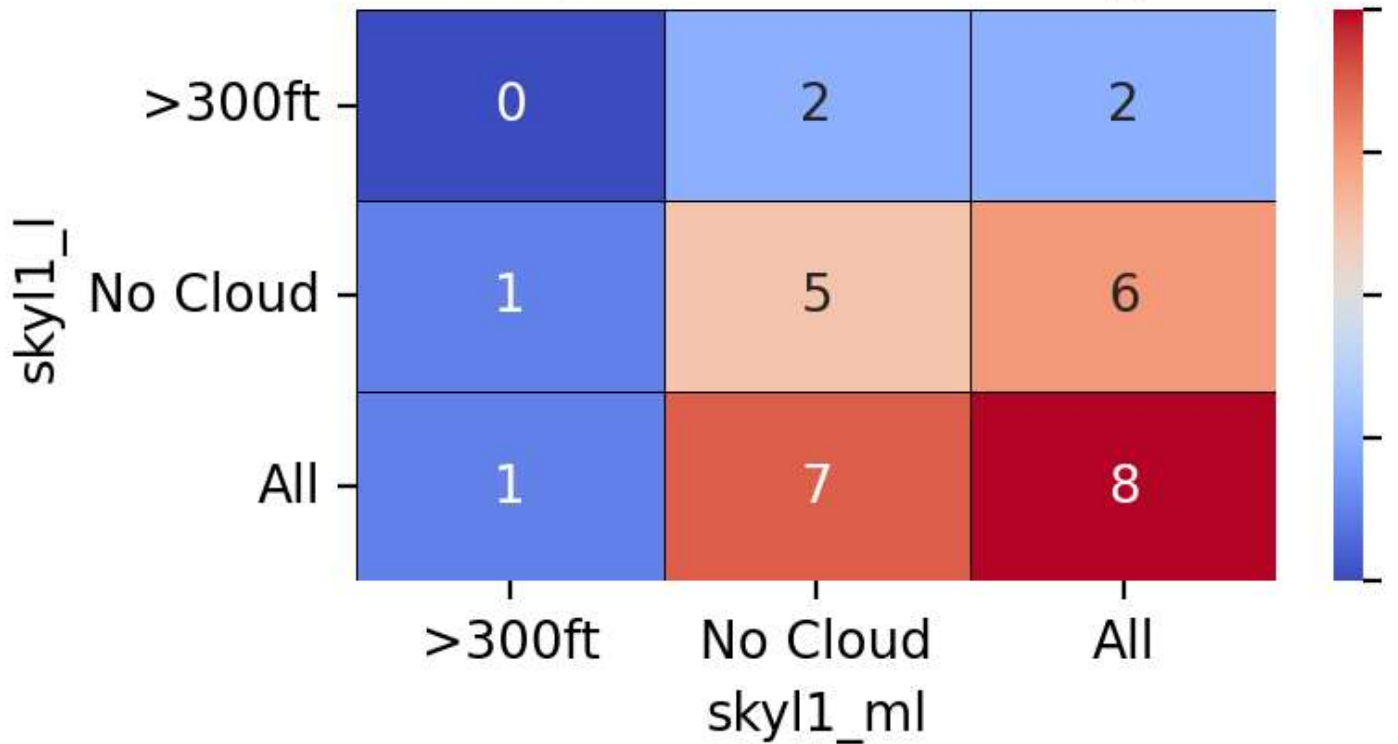
Probabilistic results

BKN	↓ FE...	M	SCT	time
0.01	0.94	0.02	0.02	15/05/2023 10:00
0.02	0.89	0.06	0.04	16/05/2023 13:00
0.02	0.88	0.03	0.07	16/05/2023 15:00
0.02	0.86	0.05	0.07	16/05/2023 14:00
0.01	0.8	0.16	0.03	16/05/2023 11:00
0.02	0.74	0.14	0.09	16/05/2023 12:00
0.02	0.72	0.09	0.17	16/05/2023 16:00
0.02	0.63	0.02	0.34	15/05/2023 11:00
0.01	0.62	0.26	0.11	16/05/2023 17:00
0.1	0.61	0.26	0.03	15/05/2023 19:00
0.03	0.59	0.27	0.1	16/05/2023 10:00
0.16	0.57	0.13	0.13	15/05/2023 21:00
0.01	0.55	0	0.44	15/05/2023 16:00

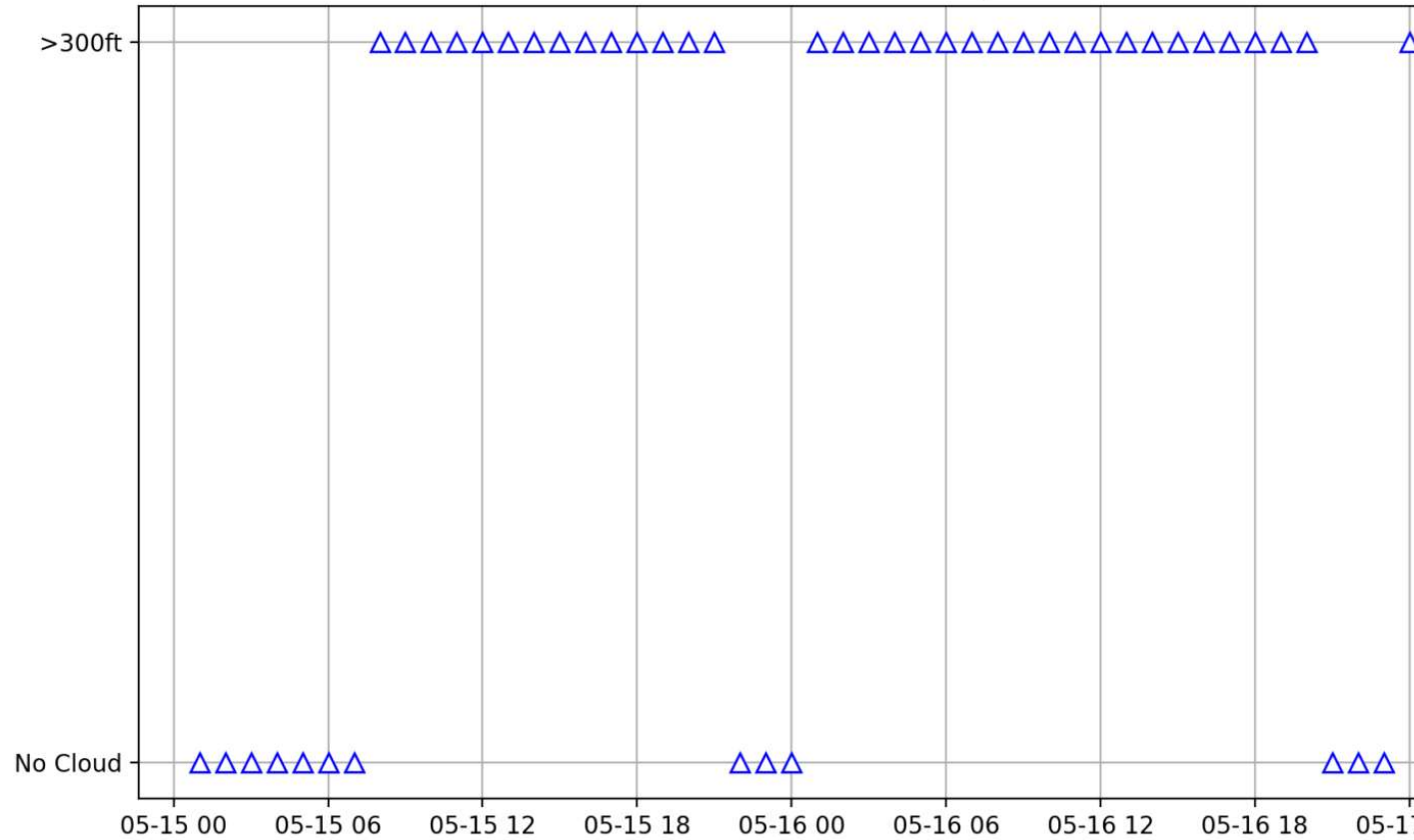
Cloud height level 1

Confusion matrix

Accuracy machine learning: 62%



Forecast machine learning

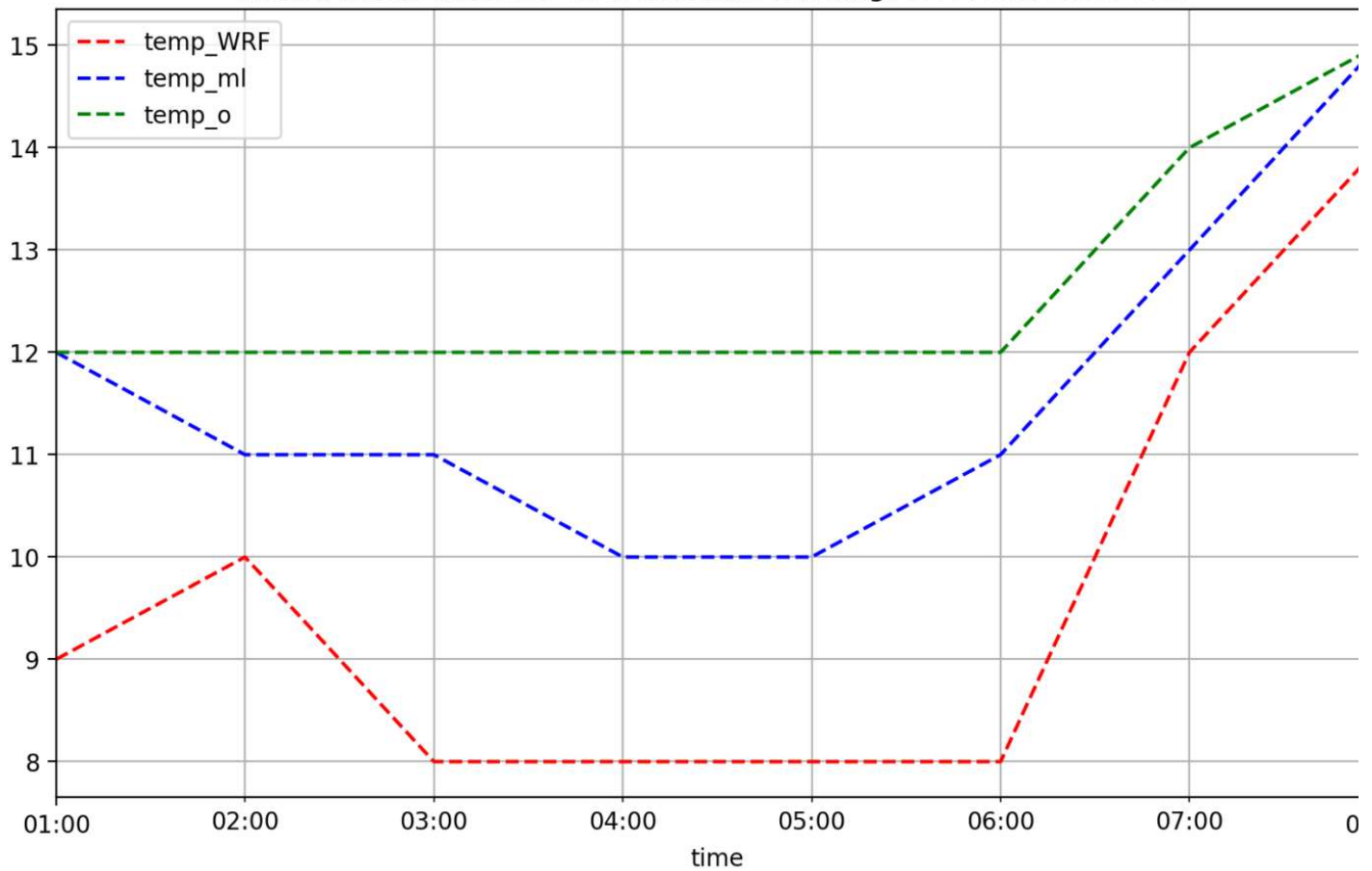


Probabilistic results

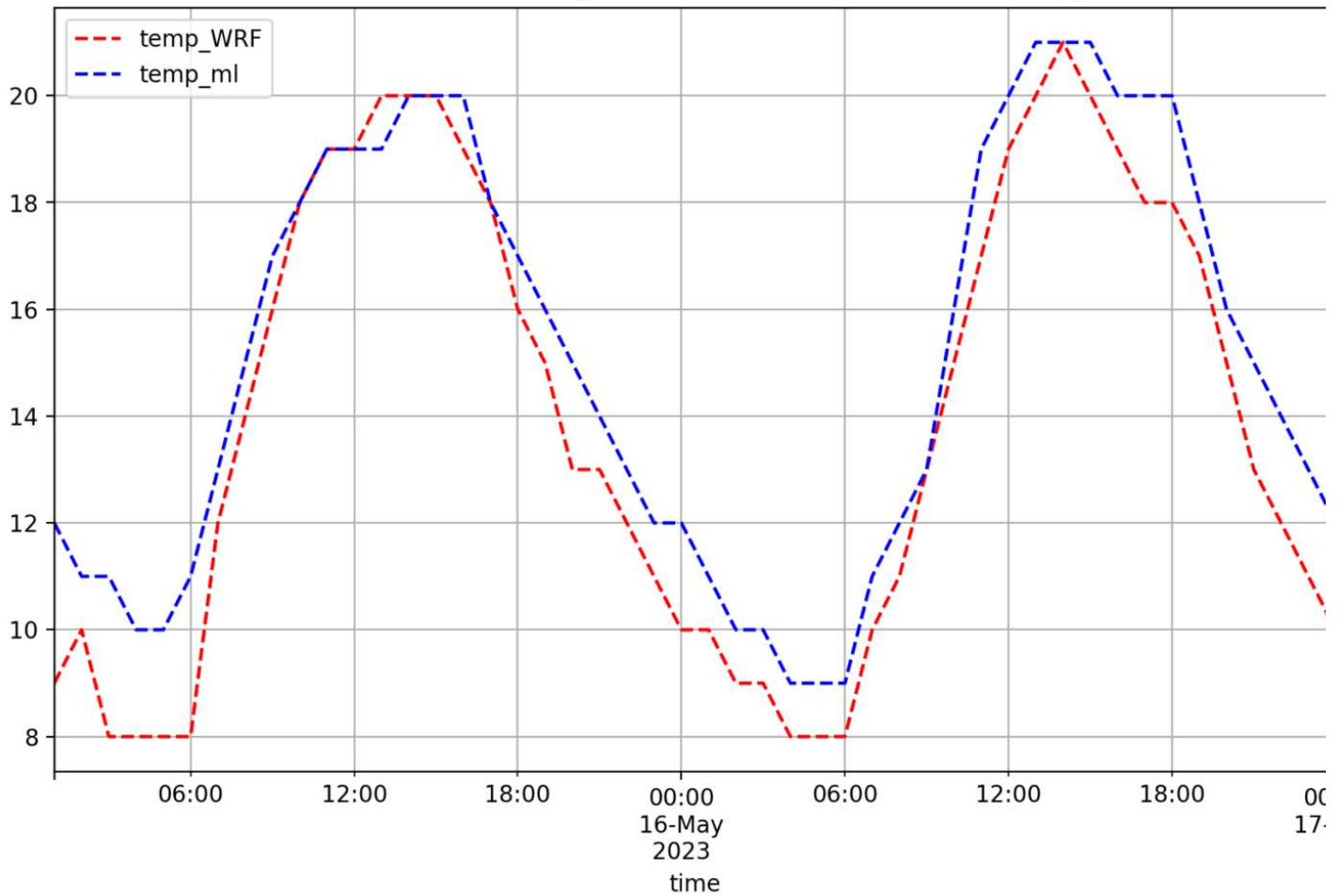
<=300ft	>300ft	No Cloud	time
0	0.04	0.96	15/05/2023 01:00
0	0.03	0.97	15/05/2023 02:00
0	0.04	0.96	15/05/2023 03:00
0	0.04	0.96	15/05/2023 04:00
0.01	0.05	0.94	15/05/2023 05:00
0	0.01	0.98	15/05/2023 06:00
0.01	0.05	0.94	15/05/2023 07:00
0	0.75	0.24	15/05/2023 08:00
0	0.59	0.41	15/05/2023 09:00
0	0.97	0.03	15/05/2023 10:00
0	0.98	0.02	15/05/2023 11:00
0	1	0	15/05/2023 12:00
0	1	0	15/05/2023 13:00

Temperature Celsius

Actual mean absolute error meteorological model: 3.0. Reference: 1.44
Actual mean absolute error machine learning: 1.0. Reference: 0.85

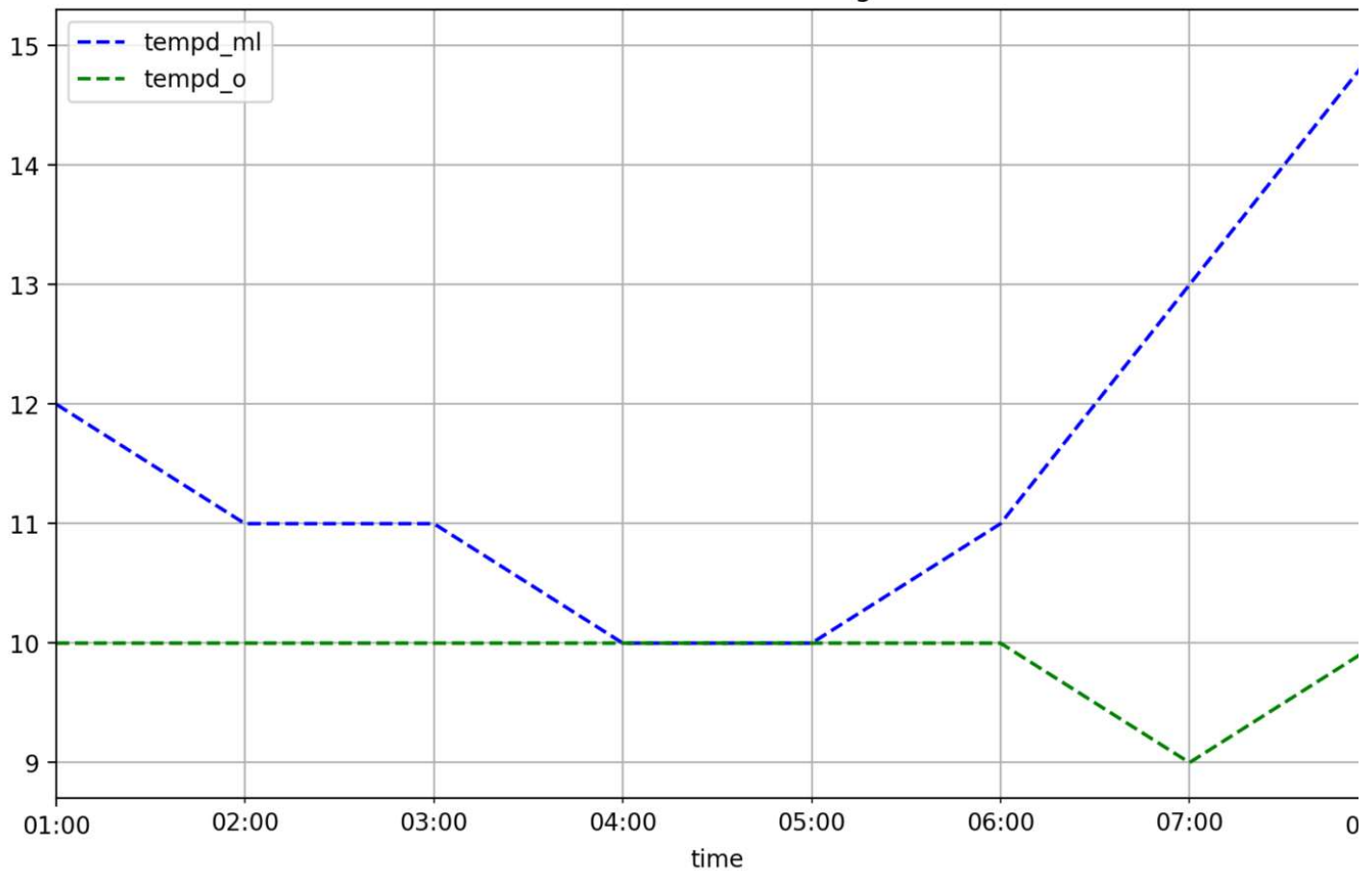


Forecast meteorological model versus machine learning

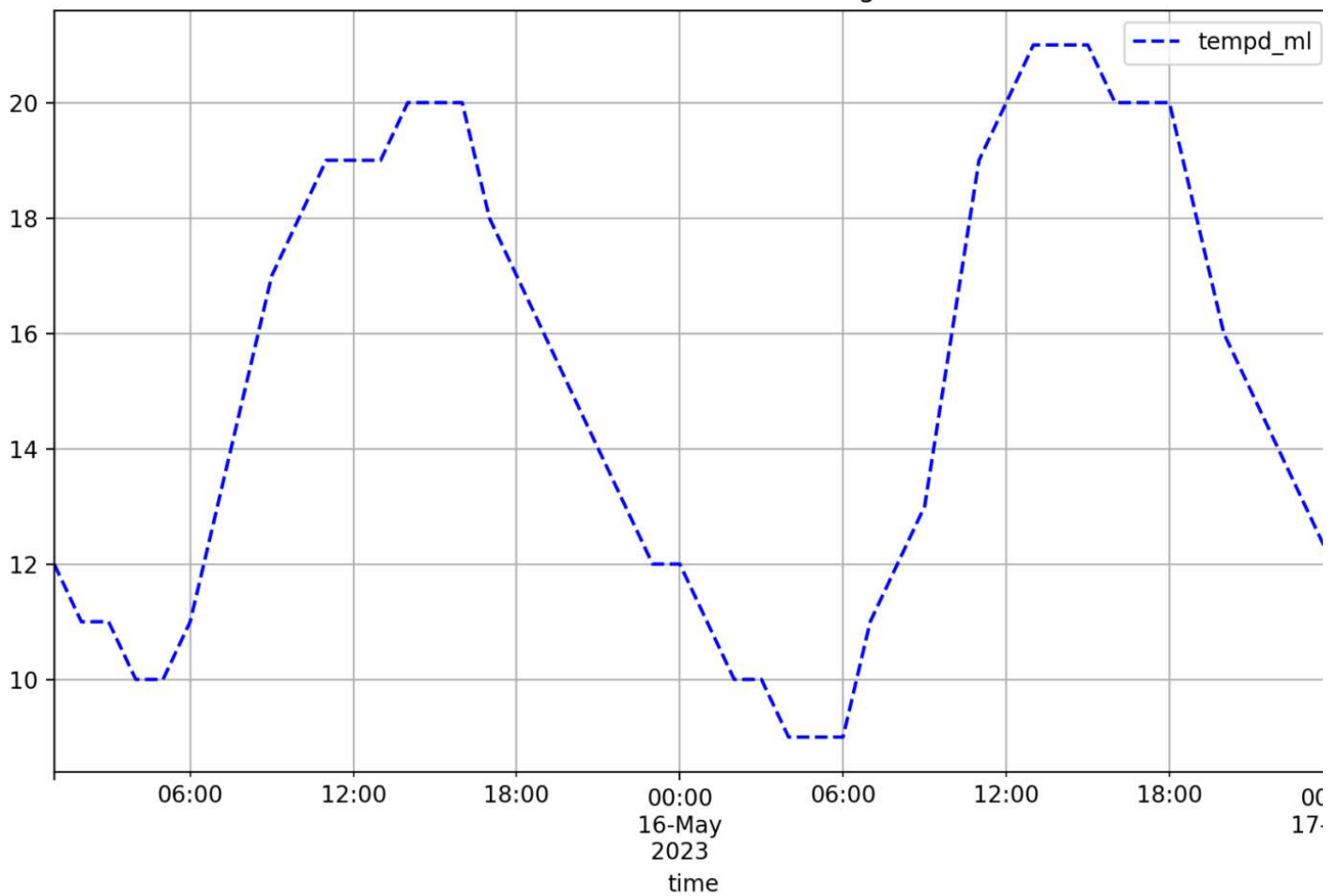


Dew temperature Celsius

Actual mean absolute error machine learning: 1.75. Reference: 0.95

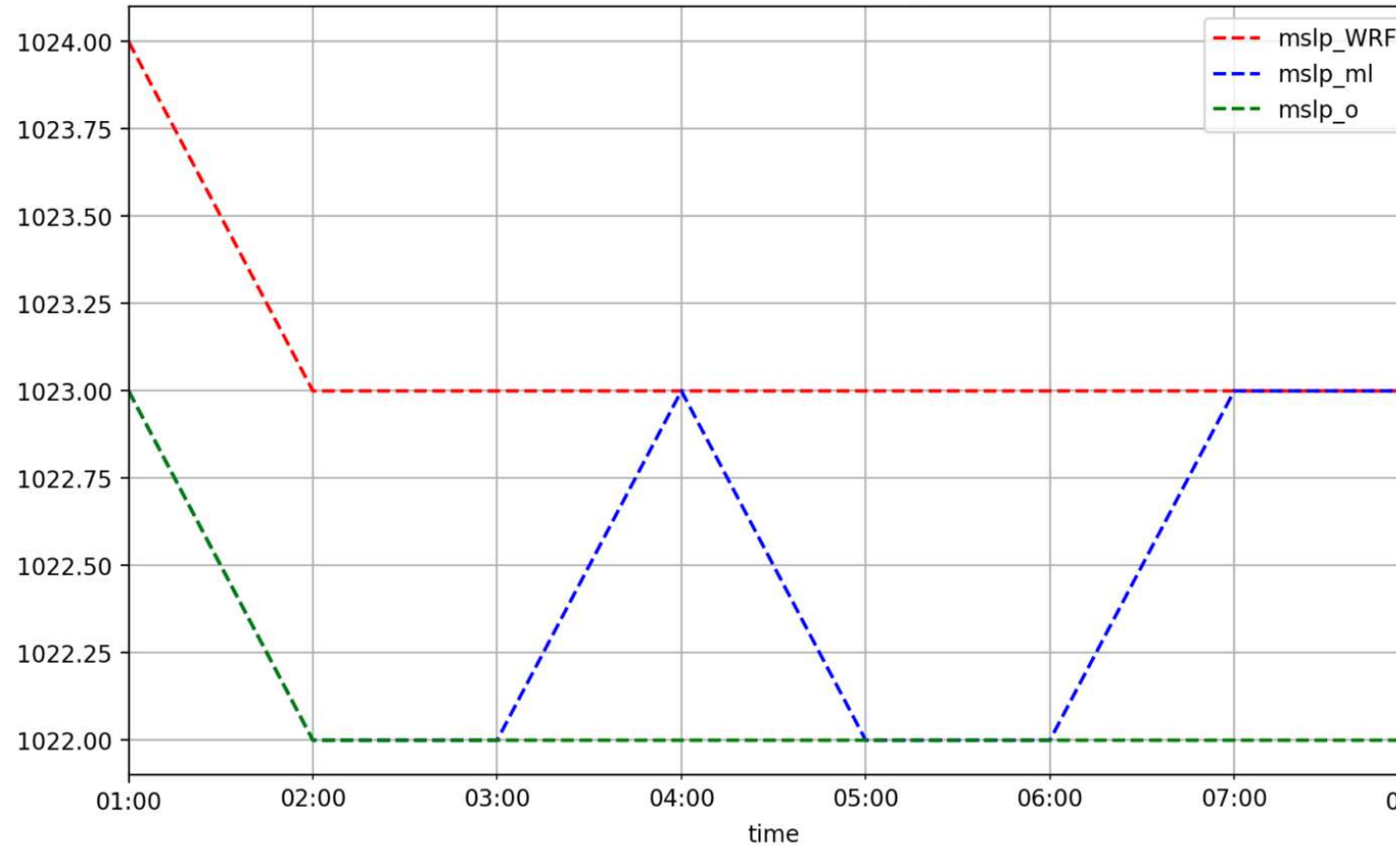


Forecast machine learning

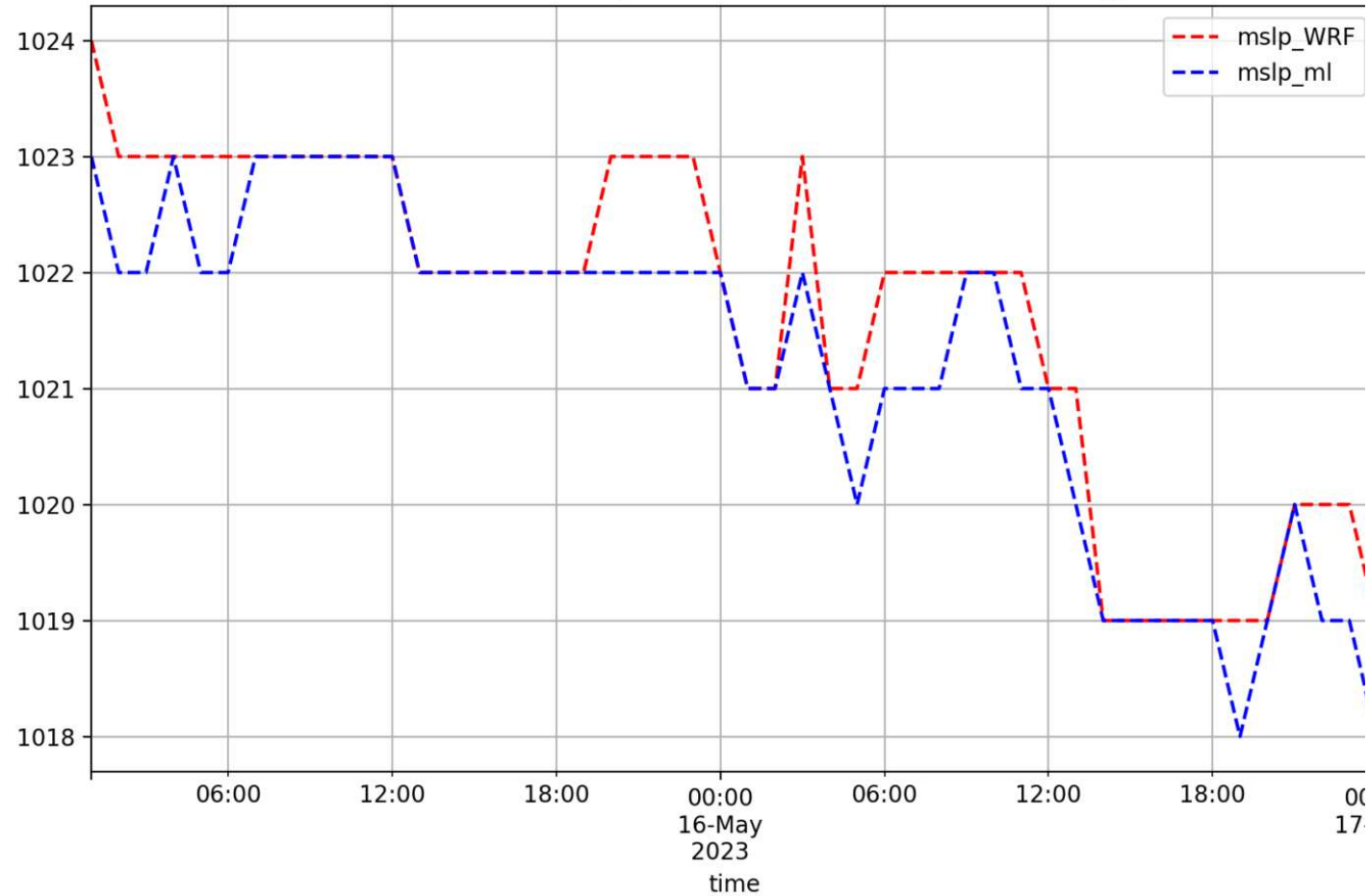


Pressure hectopascals

Actual mean absolute error meteorological model: 1.0. Reference:0.85
Actual mean absolute error machine learning: 0.38. Reference: 0.45



Forecast meteorological model versus machine learning



Global results

Better meteorological model outcome: 0

▶ []

Better machine learning outcome: 3

▼ [
0 : "wind speed"
1 : "temperature"
2 : "pressure"
]

Project [link](#)

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