



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Weather forecast verification at FMI

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Verification?

- A way to measure how good or accurate our forecasts are.
- A way to find and cope with model / postprocess / meteorologist -errors.
- An important tool to understand and improve our forecast.
- A way to report our performance to our supervisors at Traffic Ministry



Official verification at different Operational units

- Aviation and Military Weather Services
 - Low clouds, visibility and ceiling: comparison between models, to find best working model for current weather. Also statistics are collected daily basis.
- Safety Weather Services
 - Hit Rate of wind warnings
- Tailored Weather Services
 - Temperature: comparison between models and postprocessing methods, daily basis and monthly reports.
 - Precipitation: comparison between models.



Verification Tools at FMI

- Verification tool

- Compare different models, postprocessing methods, data from different national meteorological institutes.
- Visualize results with tables, column-charts, maps, line-charts

- Personal Trainer

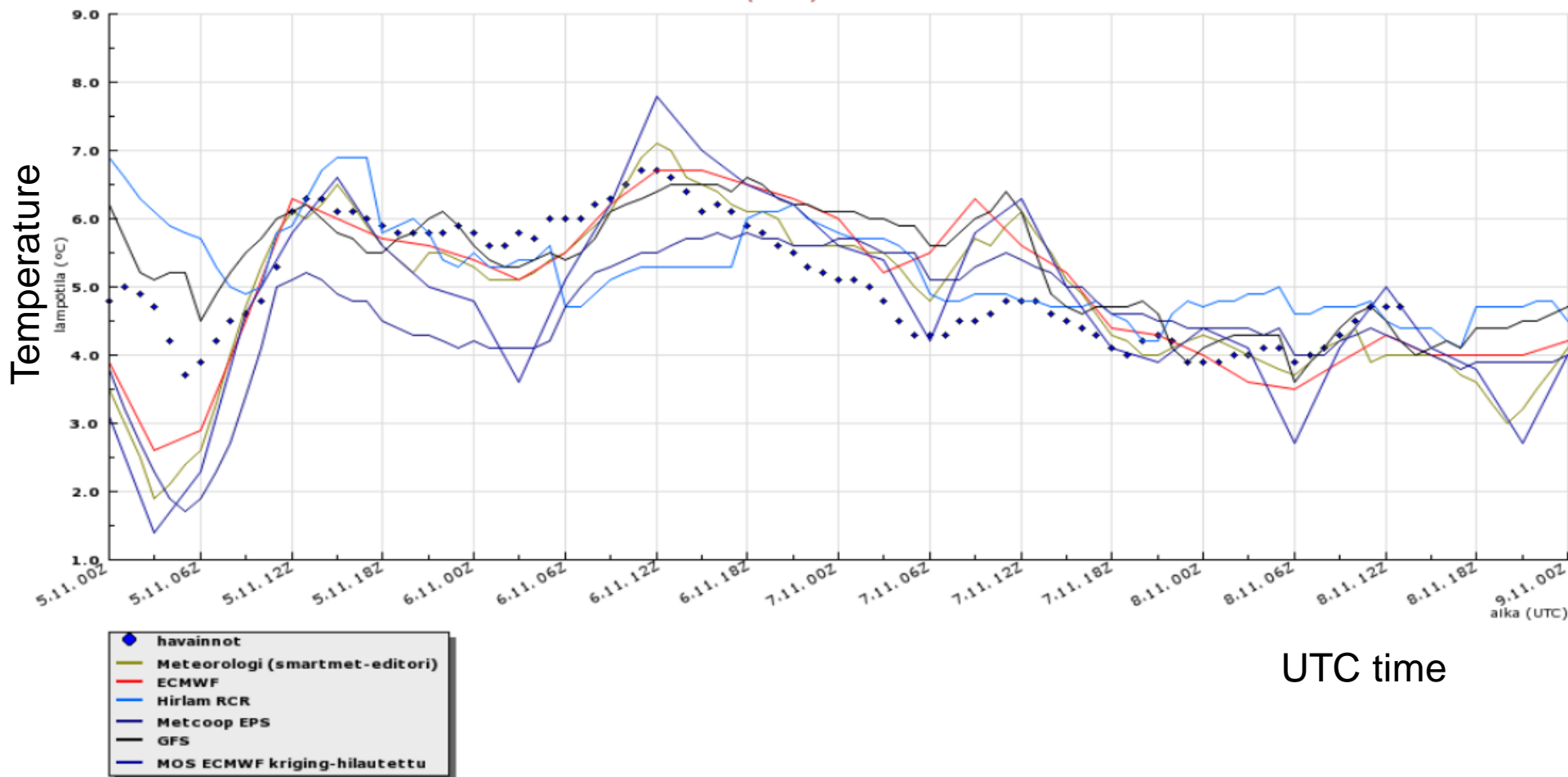
- Compare your own forecast to average of all forecasts.
- You can verificate latest, or average of your own forecasts.
- All meteorologist can see the general results, your own results are only visible for you and your supervisor.
- Visualize results with tables, column –charts, matrixes, dot-charts...
- Still under development, new features will be added in the future.



Daily verification, 24h temperature forecast

Lähimmät vähintään 24 h (1 vrk) ennusteet (saapumisajan mukaan) vs. havainnot, parametrina lämpötila

OULU OULUNSALO PELLONPÄÄ (02851): 2018-11-05 00Z - 2018-11-09 00Z





The latest personal smartmet scores

viewing privileges for person lainem

Mikko Laine

01.08.2018 - 30.10.2018

day 1	Mikko Laine latest	analysis time (utc)	count	Mikko Laine	count	general	count	≡
INDEX (Tmin06&Tmax18)	0.96	27.10.2018 00	50	0.908	695	0.904	8747	
INDEX2 (Temperature)	0.917	27.10.2018 00	229	0.897	3785	0.901	76604	
INDEXME (WS_MAX)			0		0	0.98	55391	
INDEXMAE (WS_MAX)			0		0	1.59	55391	

day 2	Mikko Laine latest	analysis time (utc)	count	Mikko Laine	count	general	count	≡
INDEX (Tmin06&Tmax18)	0.94	27.10.2018 00	50	0.89	698	0.871	8775	
INDEX2 (Temperature)	0.795	27.10.2018 00	112	0.86	1893	0.875	38277	
INDEXME (WS_MAX)			0		0	0.76	27809	
INDEXMAE (WS_MAX)			0		0	1.69	27809	

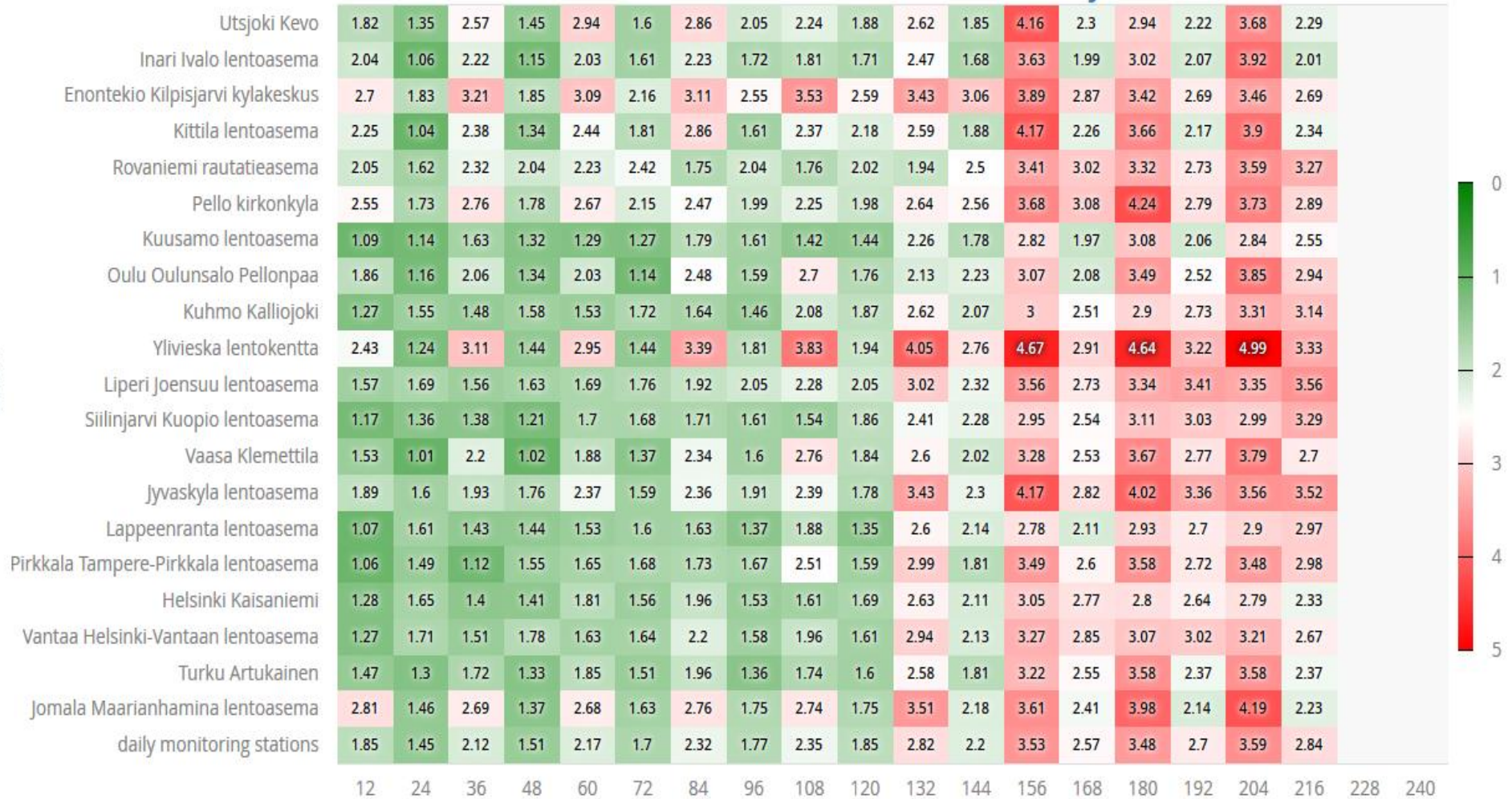


RMSE (root mean square error) of temperature at observation stations (cities/towns/airports) during October 2018

smartmet results for forecaster ALL FORECASTERS from analysis hour 12 utc

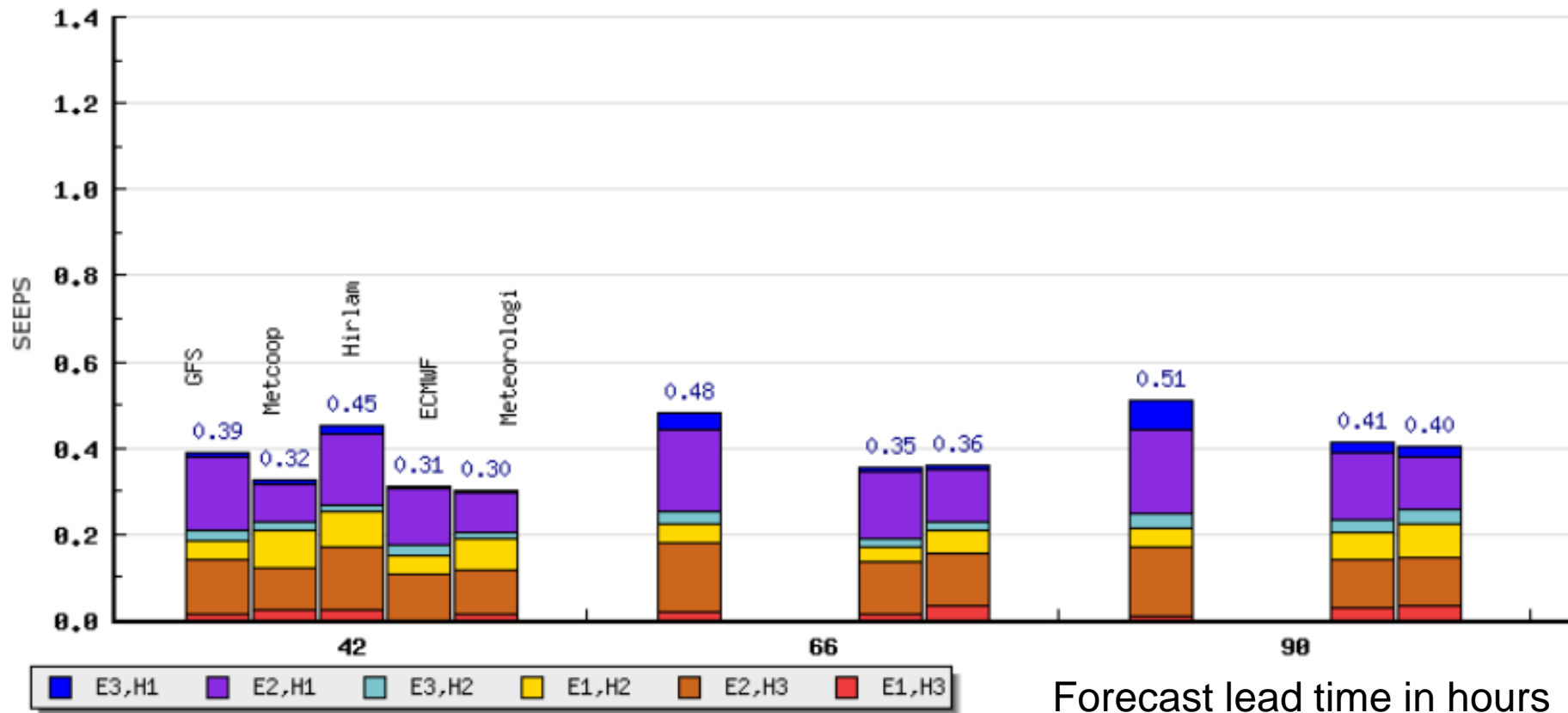
Observation stations

Values





Predictability of rain during October 2018

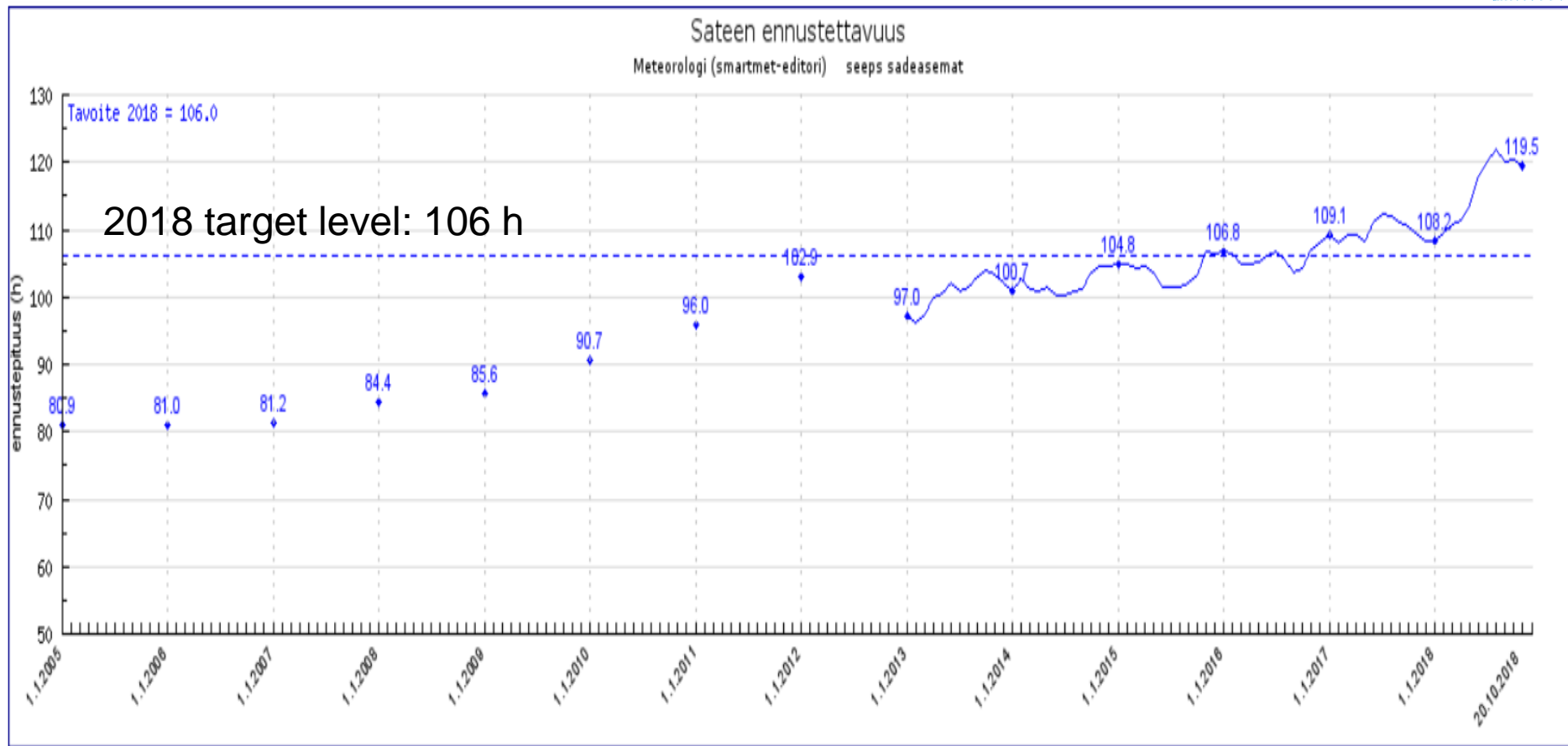


Forecast lead time in hours



Predictability of rain, over the years

Forecast lead time in hours



January 2005 - October 2018