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NOVOM SADU
PFNS
DEPARTMAN ZA RATARSTVO
POVRITARSTVO



UNIVERSITÀ
DEGLI STUDI
FIRENZE
DISPAA
DIPARTIMENTO DI SCIENZE DELLE
PRODUZIONE AGROALIMENTARI
E DELL'AMBIENTE



UNIVERSITÄT FÜR
BODENKULTUR
WIEN
BOKU
DEPARTMENT FÜR WASSER-
ATMOSPHERE-UMWELT



EUROPEAN
COMMISSION
Horizon 2020
EUROPEAN UNION FUNDING
FOR RESEARCH & INNOVATION

**Workshop
2018**

Research results - A new gap filling approach

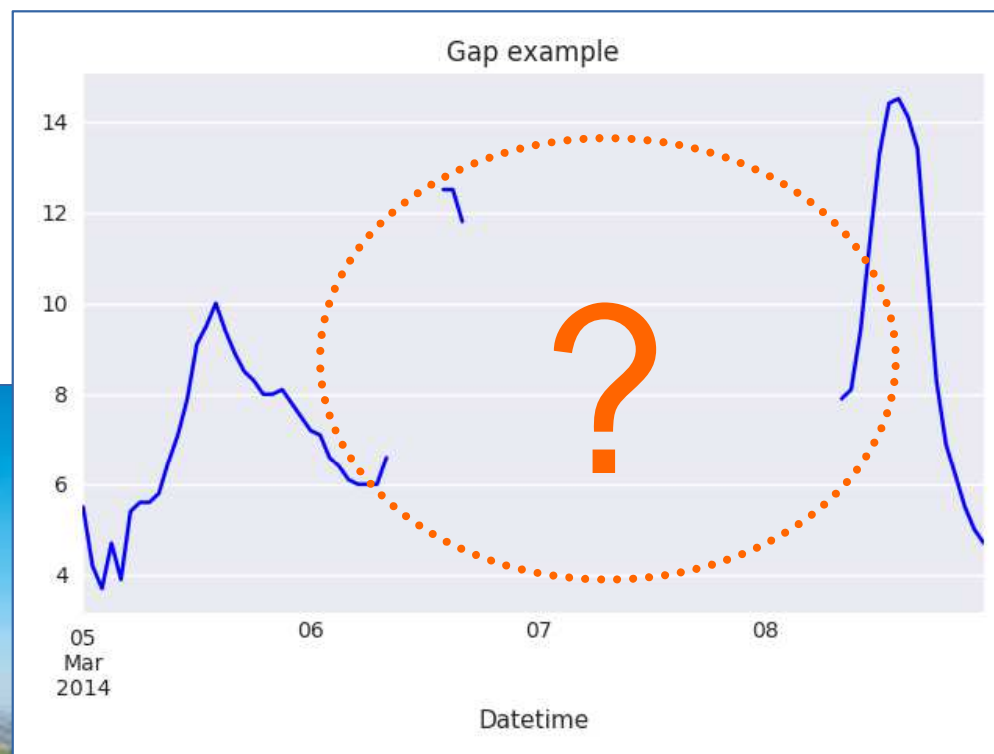
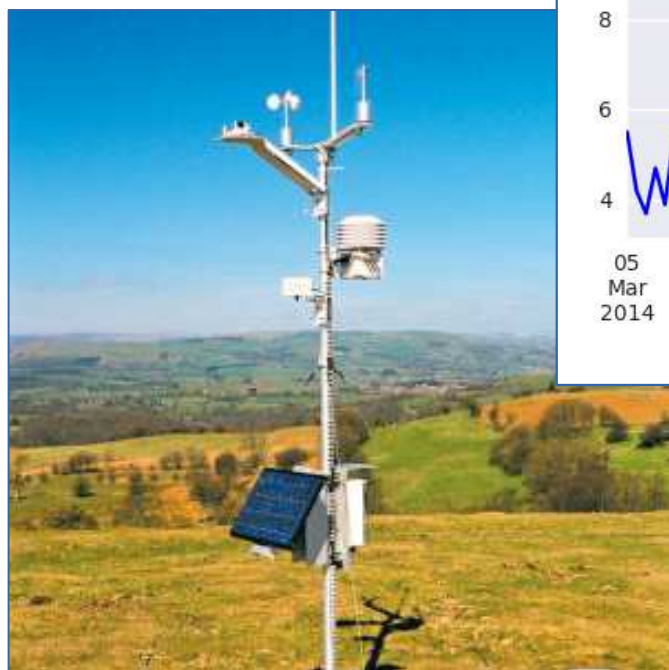
Miloš Lompar

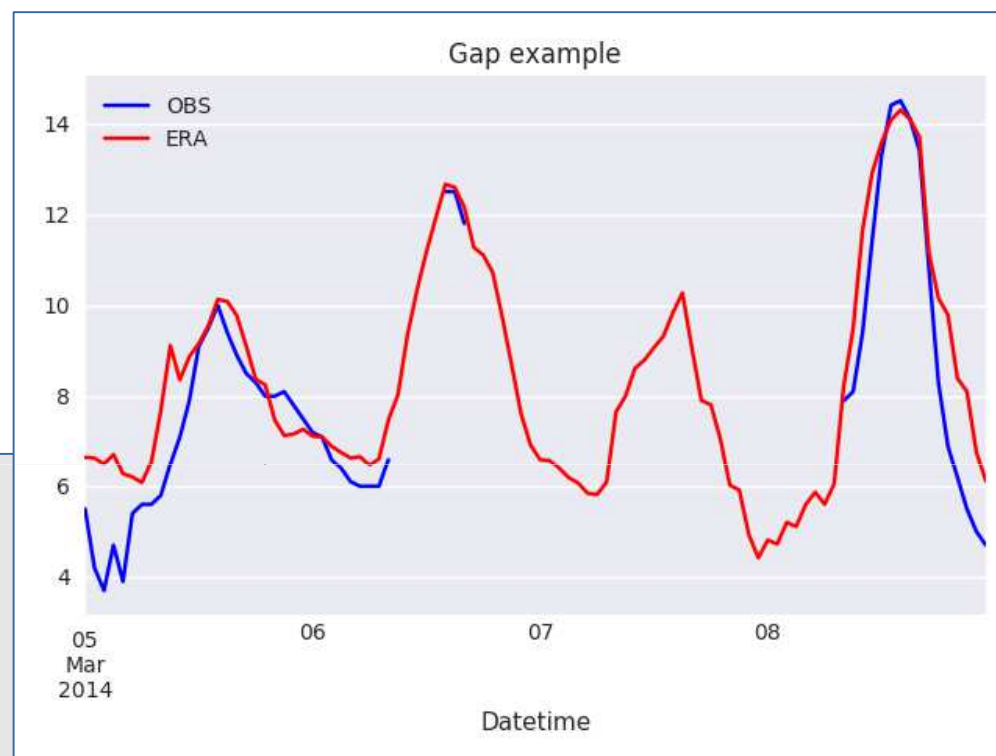


RHMSS (Republic Hydrometeorological Service of Serbia)

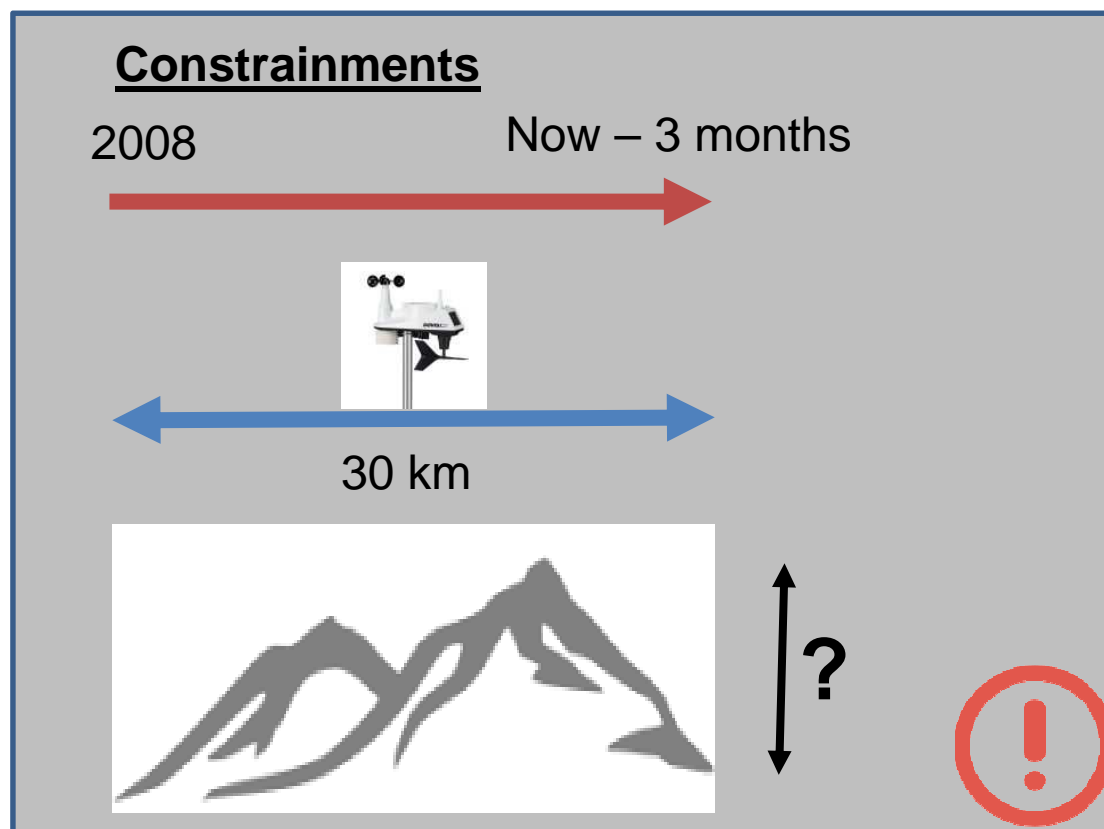
- Problem statement
- Input data sets (AWS and ERA5 reanalysis)
- Gap filling methodology
- Results

Problem statement

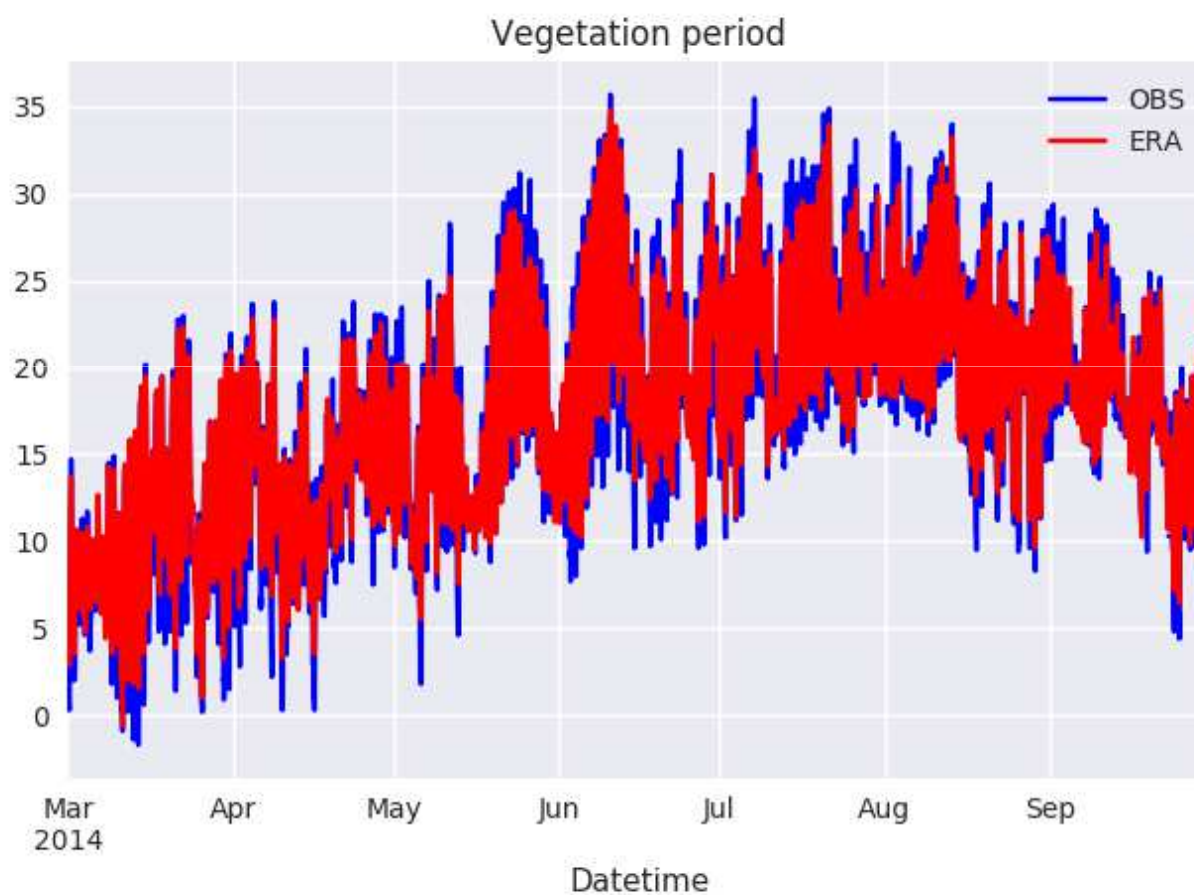




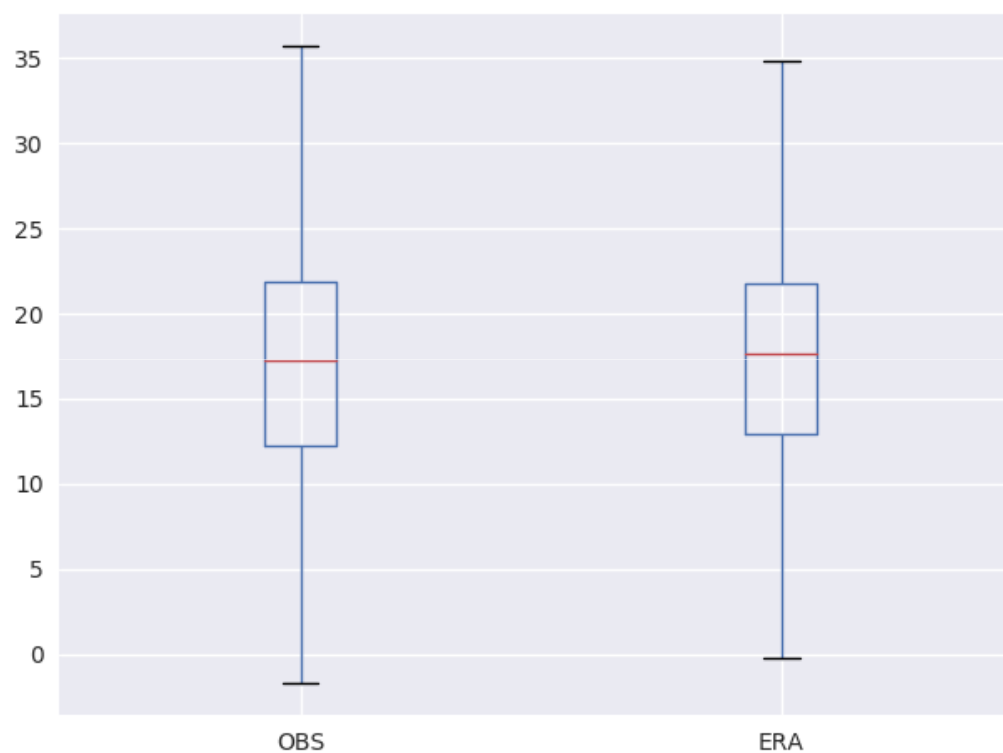
ERA5 provides **hourly** estimates of a large number of atmospheric, land and oceanic climate variables. The data cover the Earth on a **30km** grid and ...

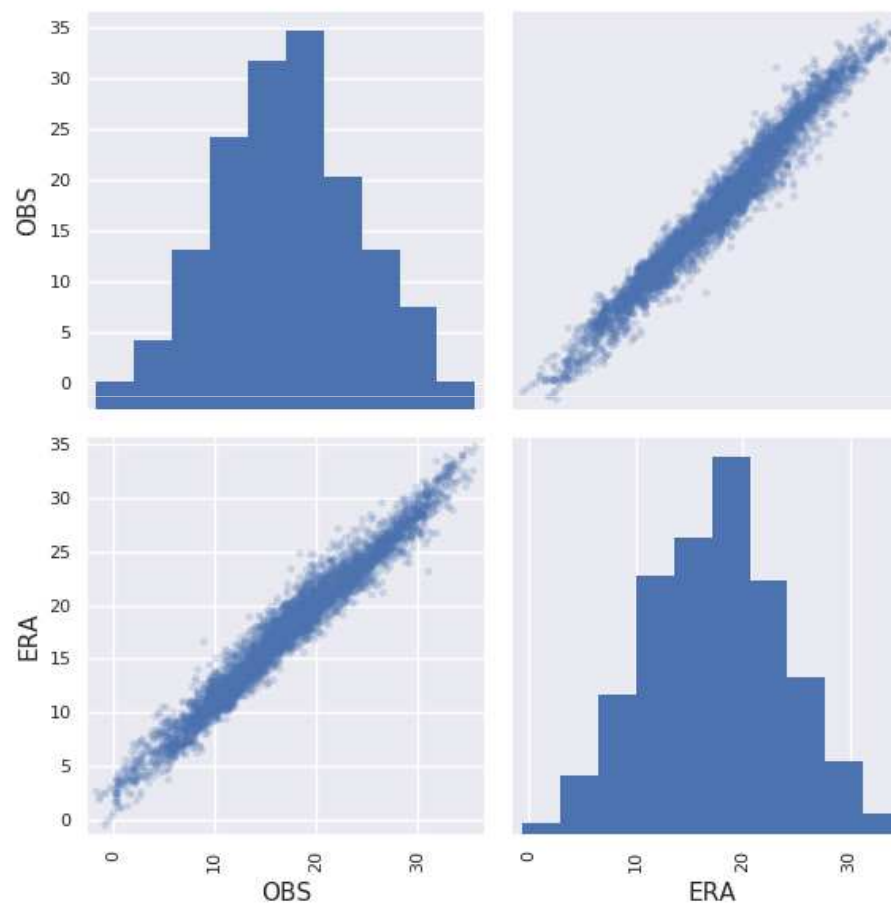


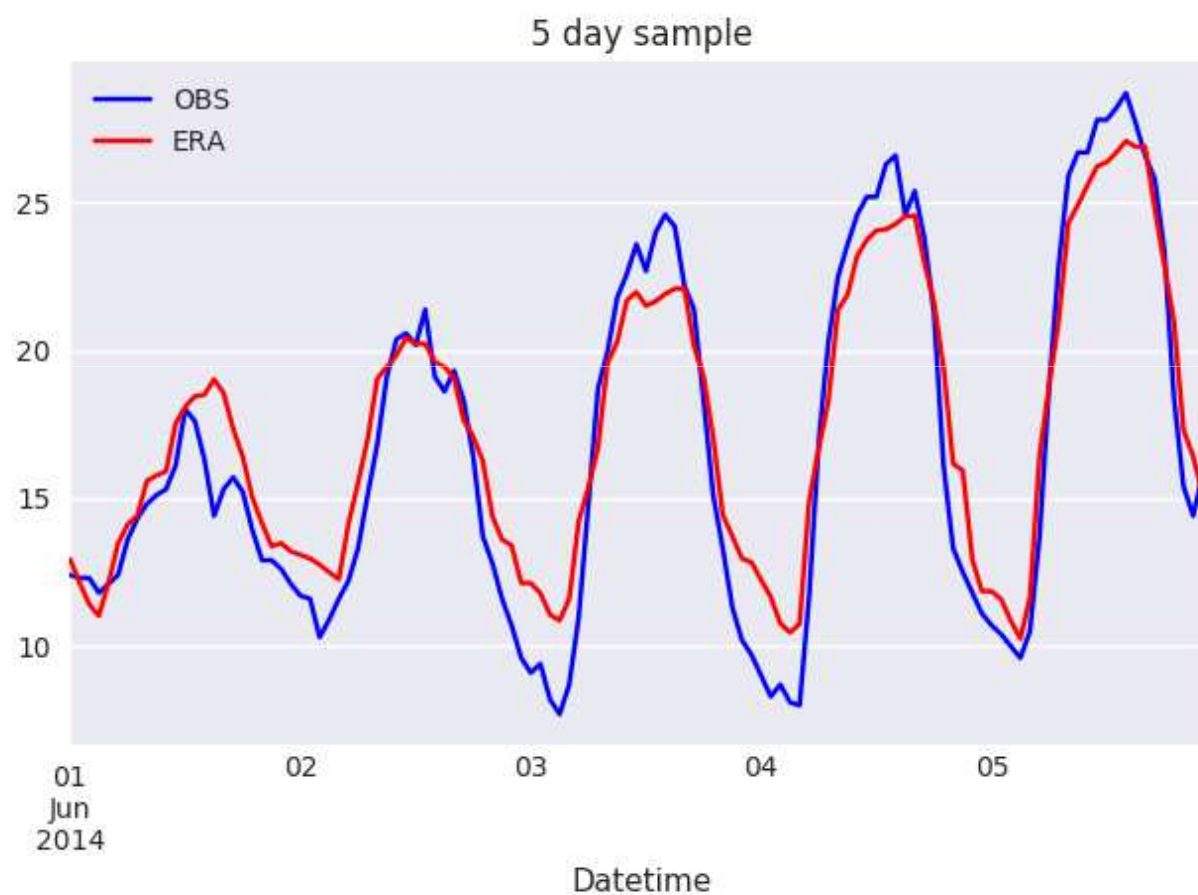
Input data sets (AWS and ERA5 reanalysis)

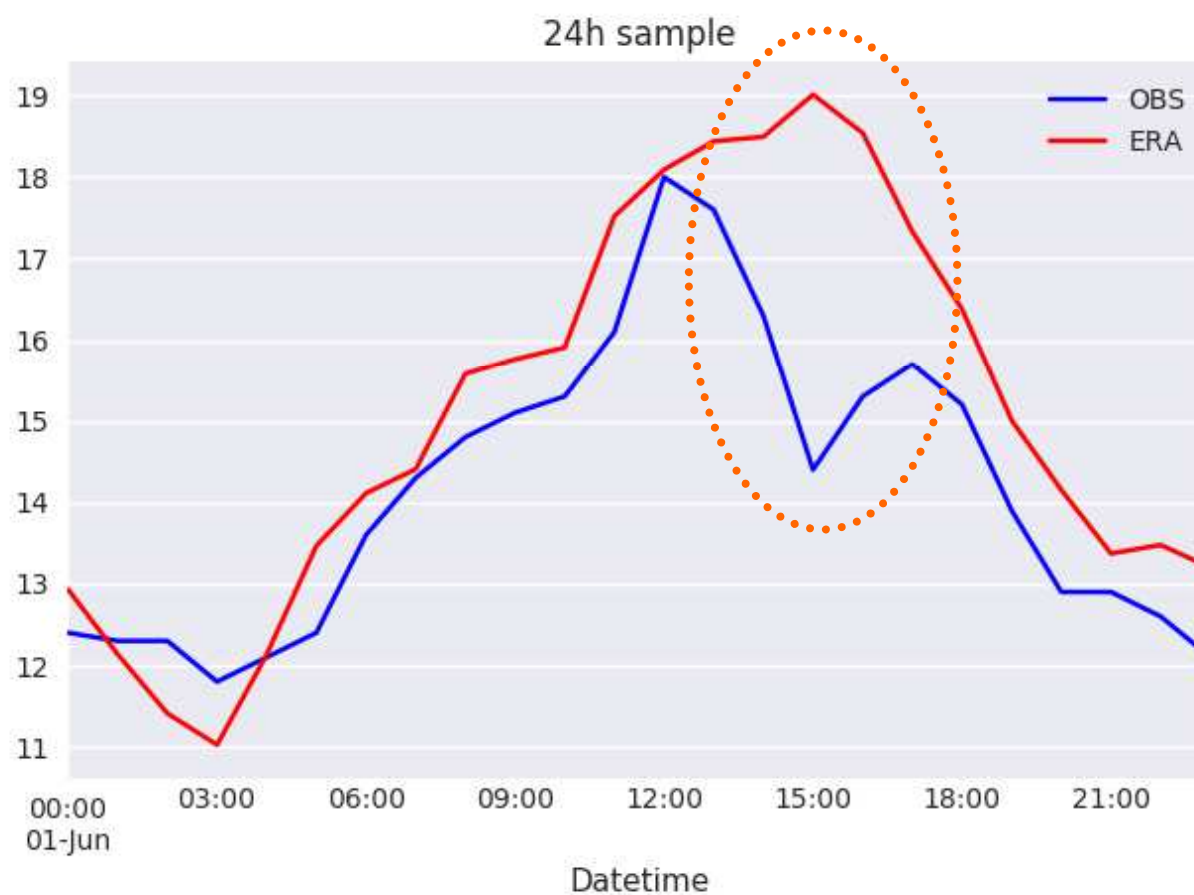


	OBS	ERA
count	5073	5136
mean	17.21	17.50
std	7.10	6.36
min	-1.7	-0.57
25 %	12.2	12.91
50 %	17.2	17.68
75 %	21.9	21.83
max	35.7	34.82

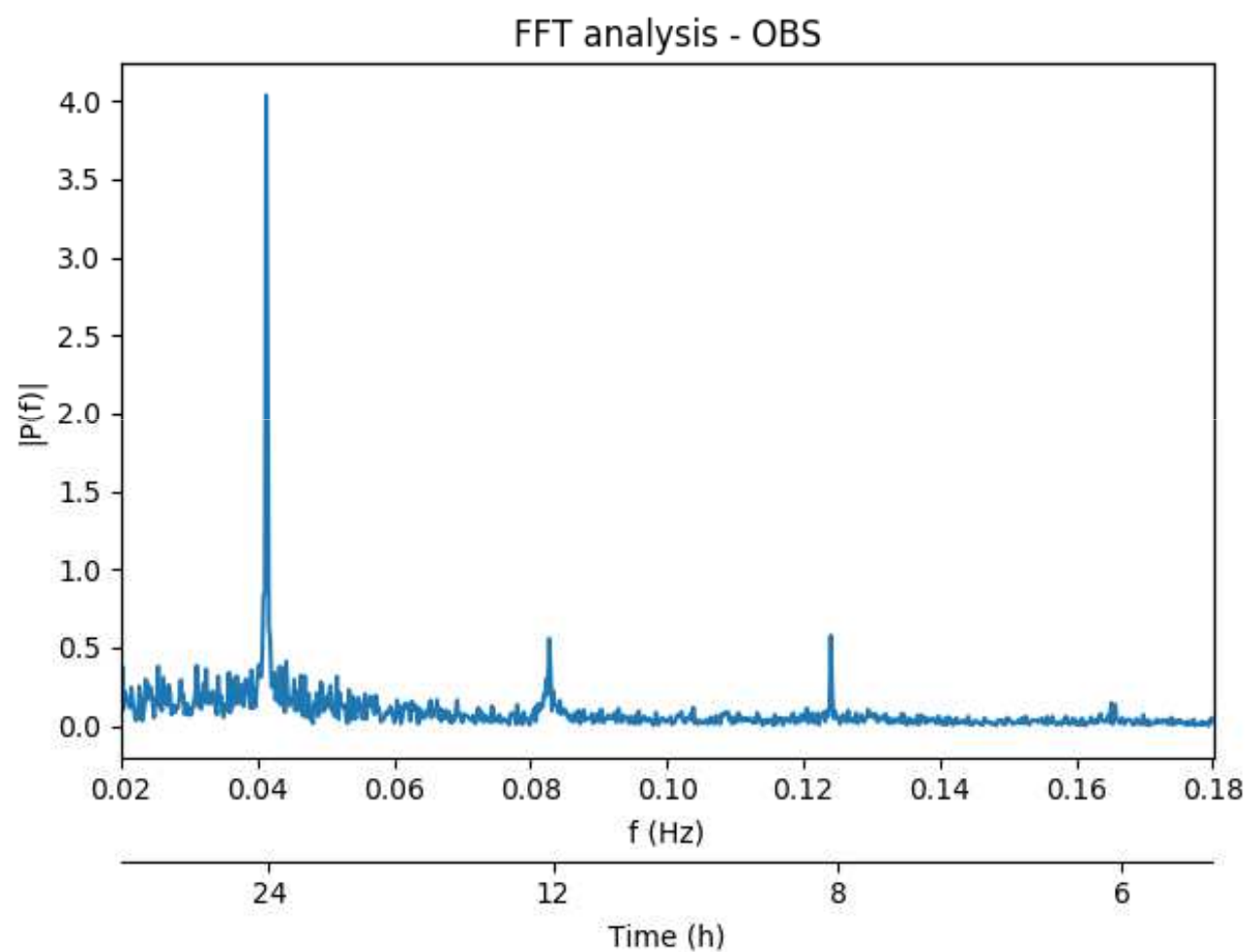


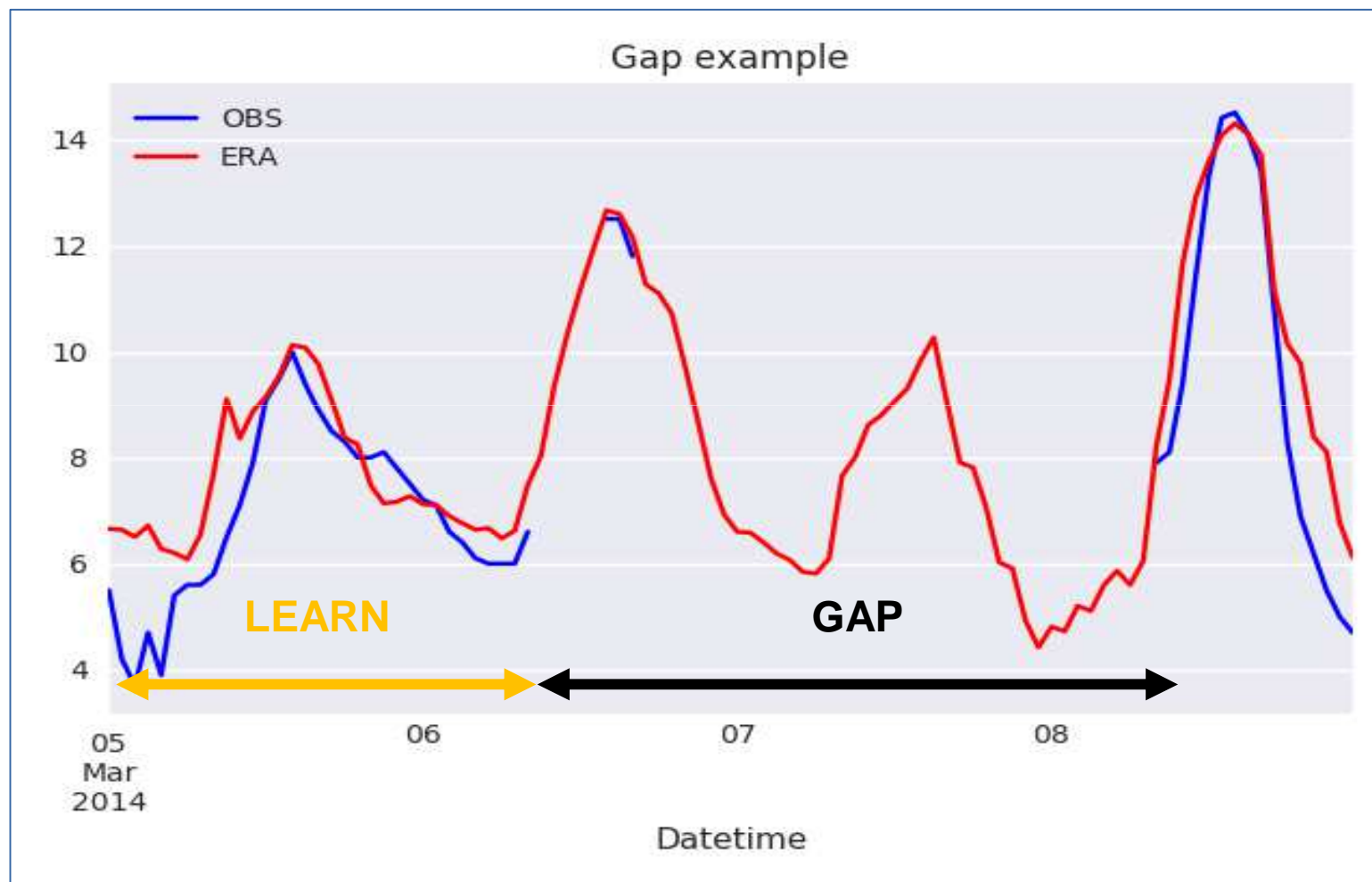






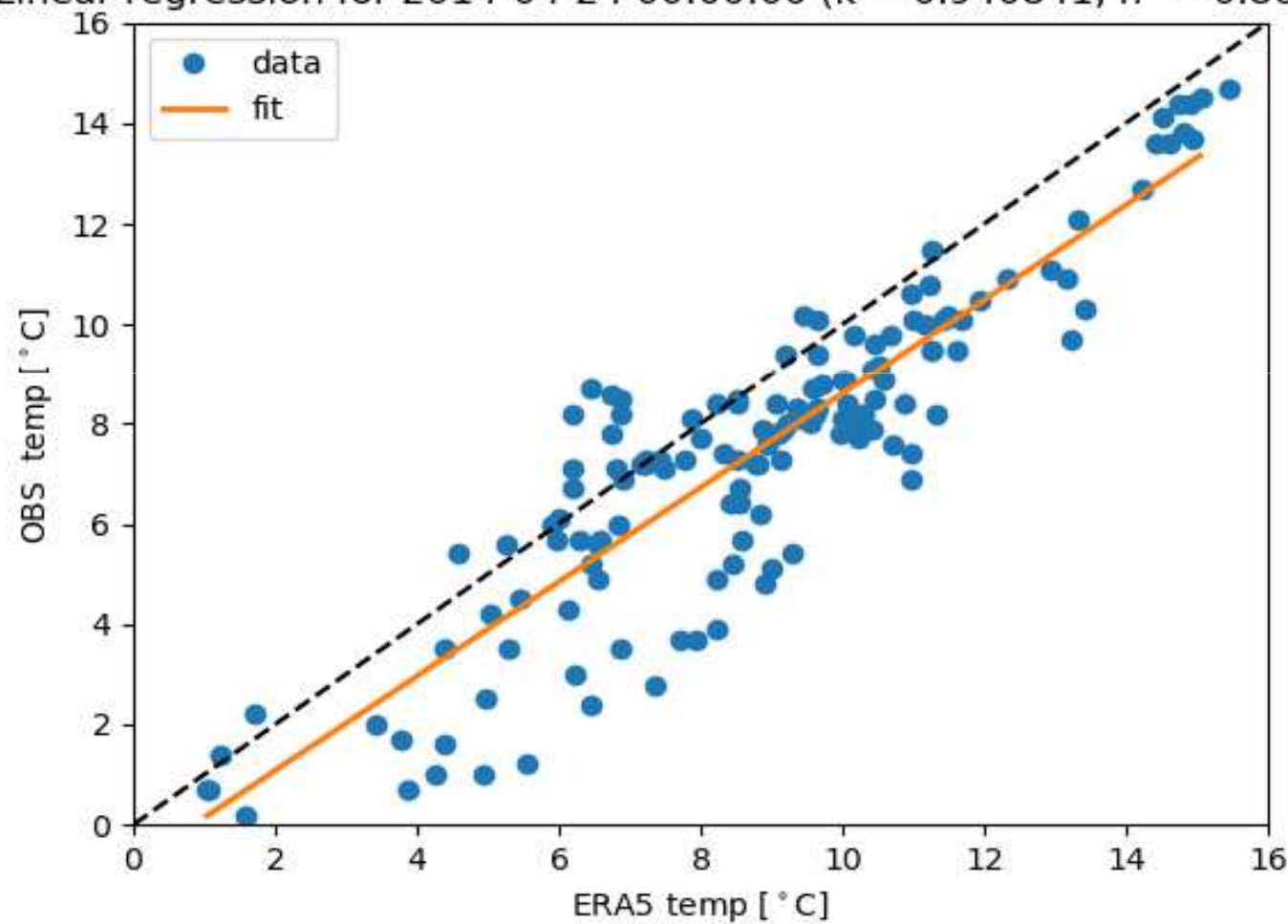
Gap filling methodology

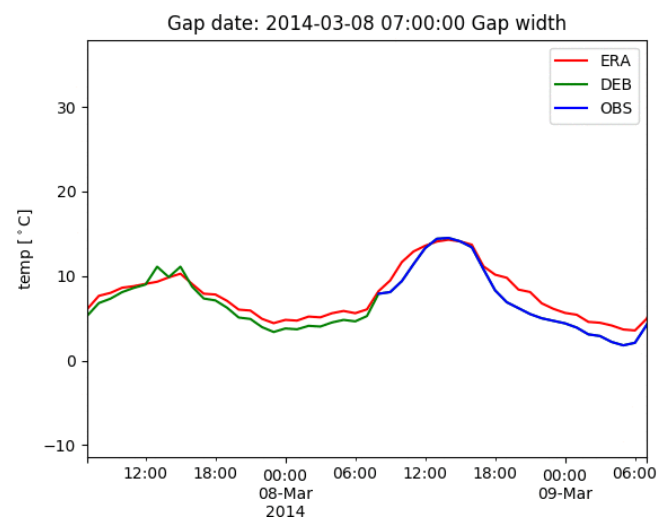
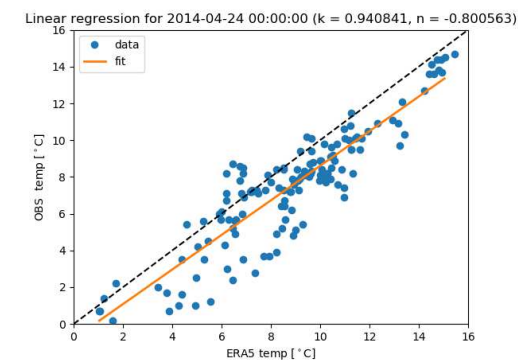
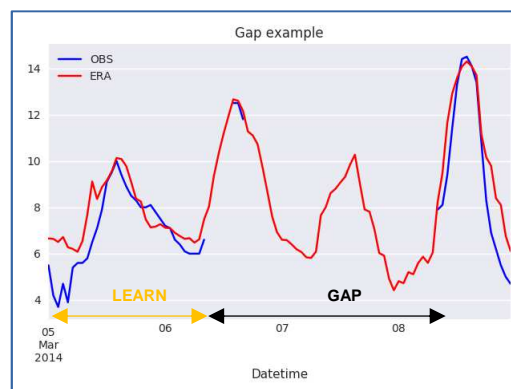
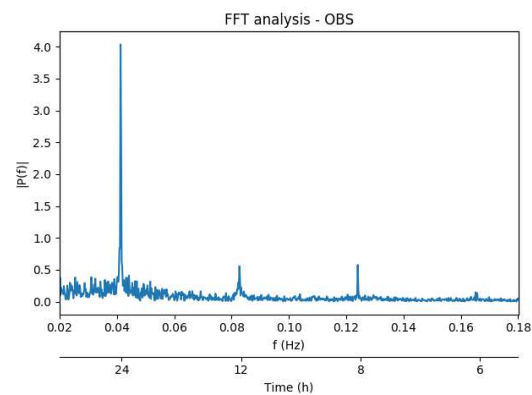


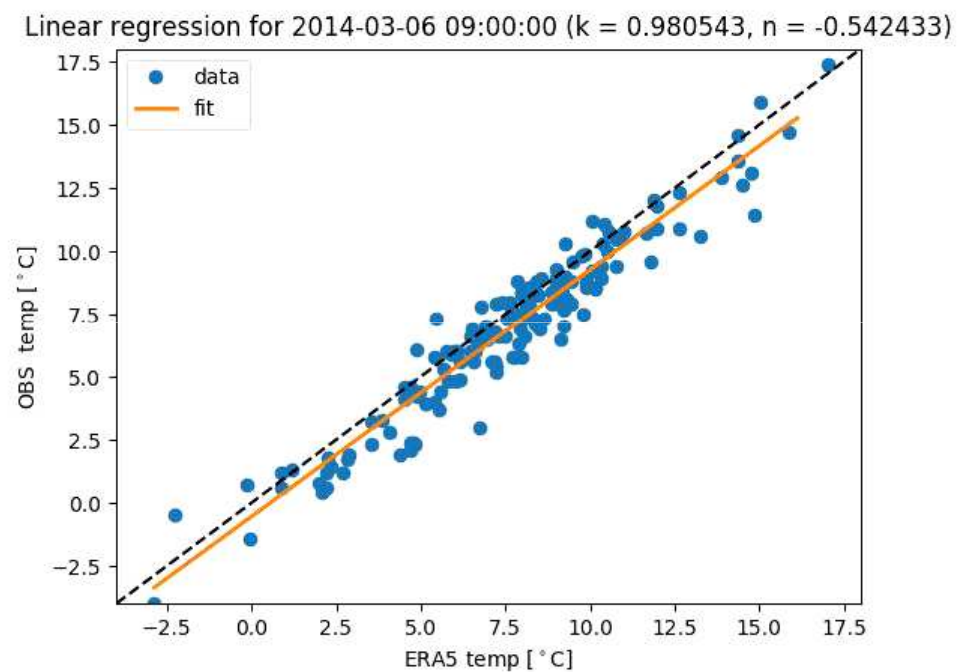
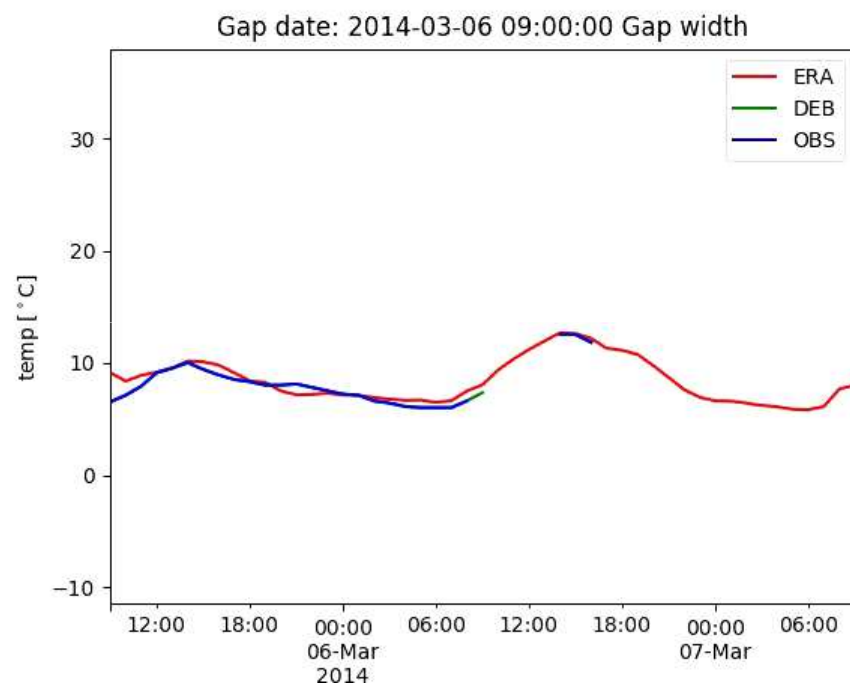




Linear regression for 2014-04-24 00:00:00 ($k = 0.940841$, $n = -0.800563$)





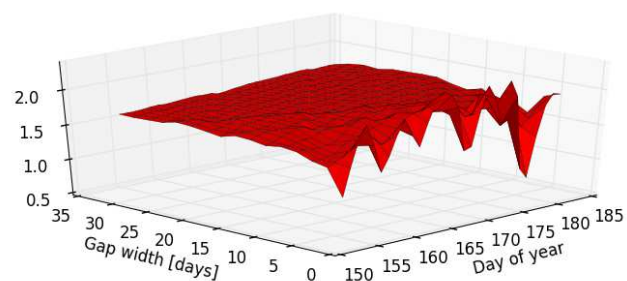


Results

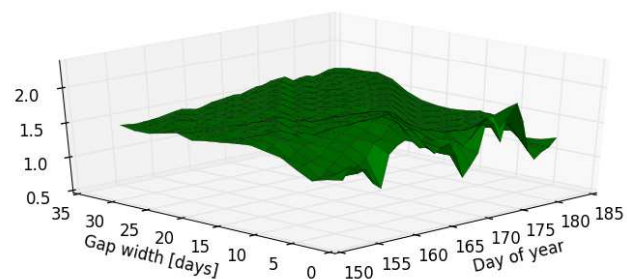
Evaluation of results

$$\text{RMSE} = \sqrt{\frac{\sum_{i=1}^n (P_i - O_i)^2}{n}}$$

(a) $RMSE_{ERA5}$



(b) $RMSE_{DEB}$



(c) $RMSE_{DEB} - RMSE_{ERA5}$

