

# INSTITUTE OF HYDROMETEOROLOGY AND SEISMOLOGY MONTENEGRO

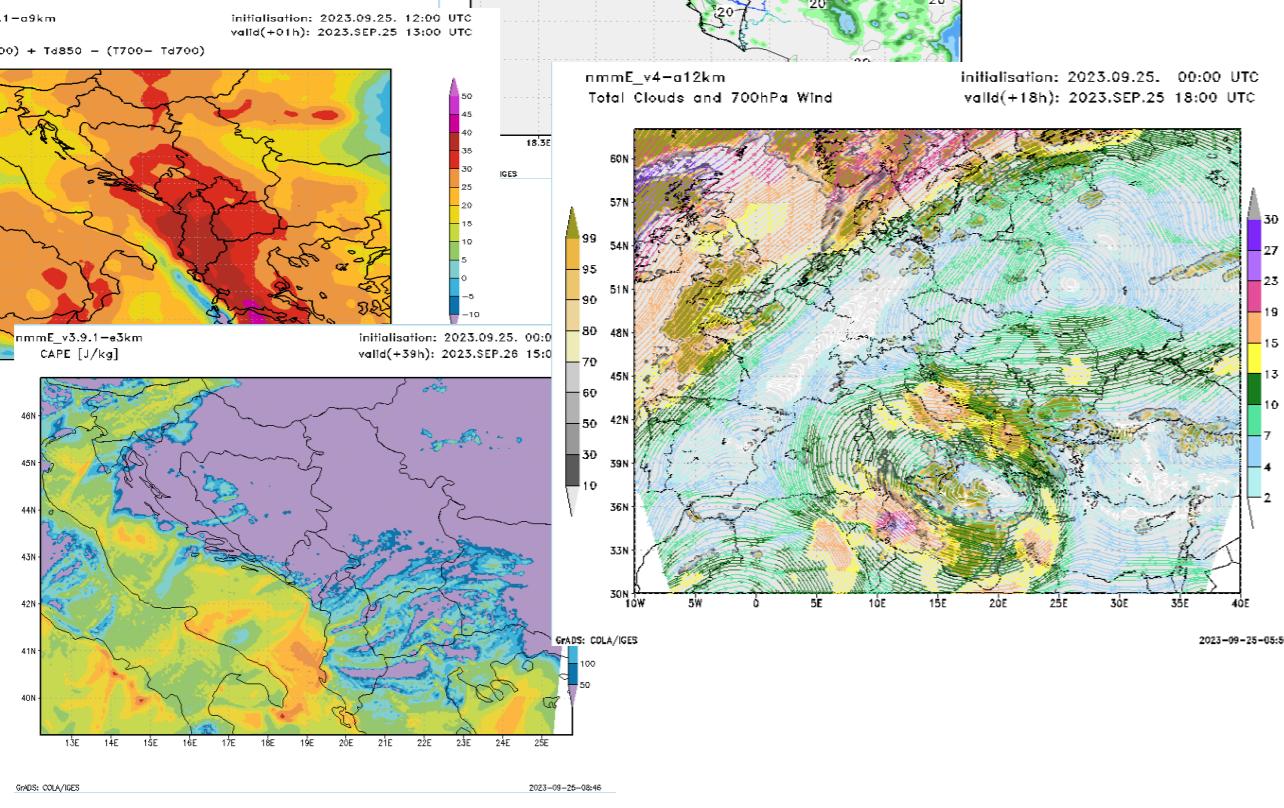
*Department of Numerical Weather Prediction, Radar and satellite Meteorology*

Angel Marčev; Aleksandar Zečević

## Operational models

### WRF-NMM

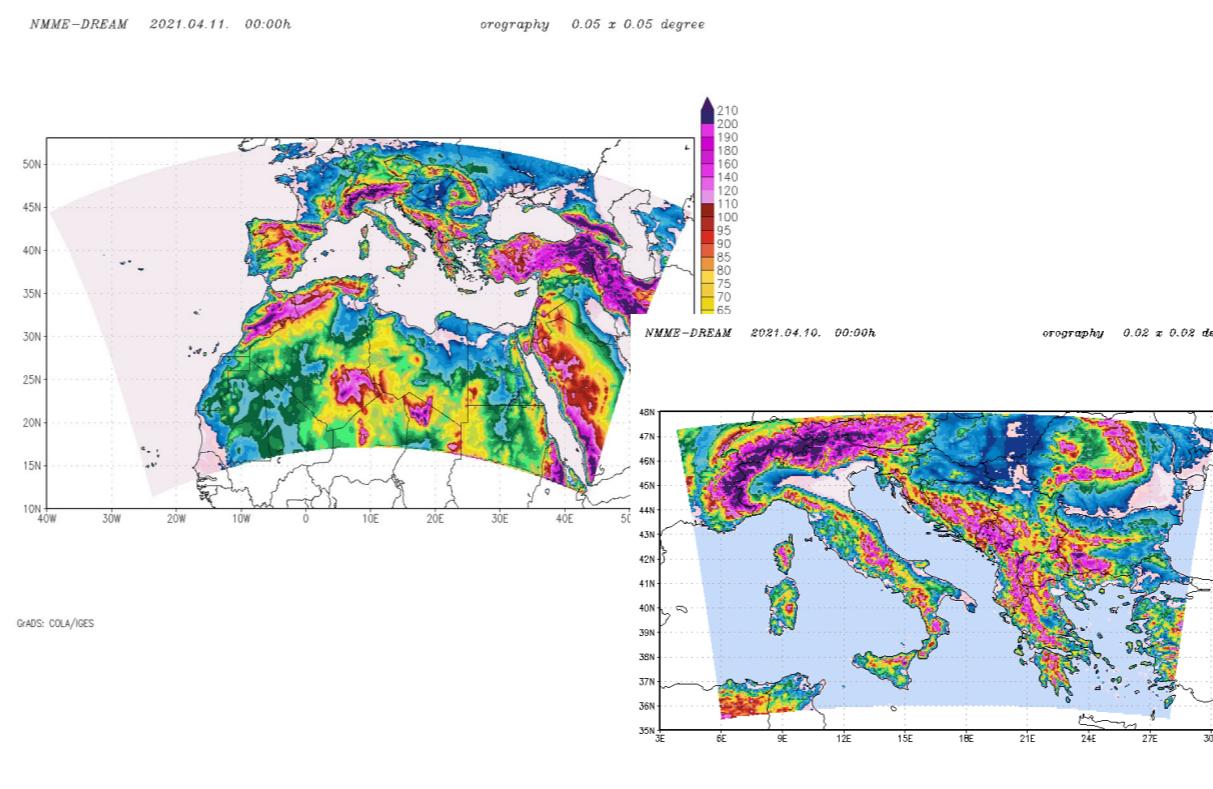
**Resolutions:**  
0.5 km; 1 km; 3 km; 8 km; 10 km  
**Areas:**  
Montenegro; Balkan Peninsula;  
South-East Europe; Europe;  
**From global models:**  
ECMWF; NCEP



### NMME-DREAM

**Resolutions:**  
2 km; 5 km

**Areas:**  
½ Europe & ½ Africa; Italy & Balkan  
**From global models:**  
ECMWF

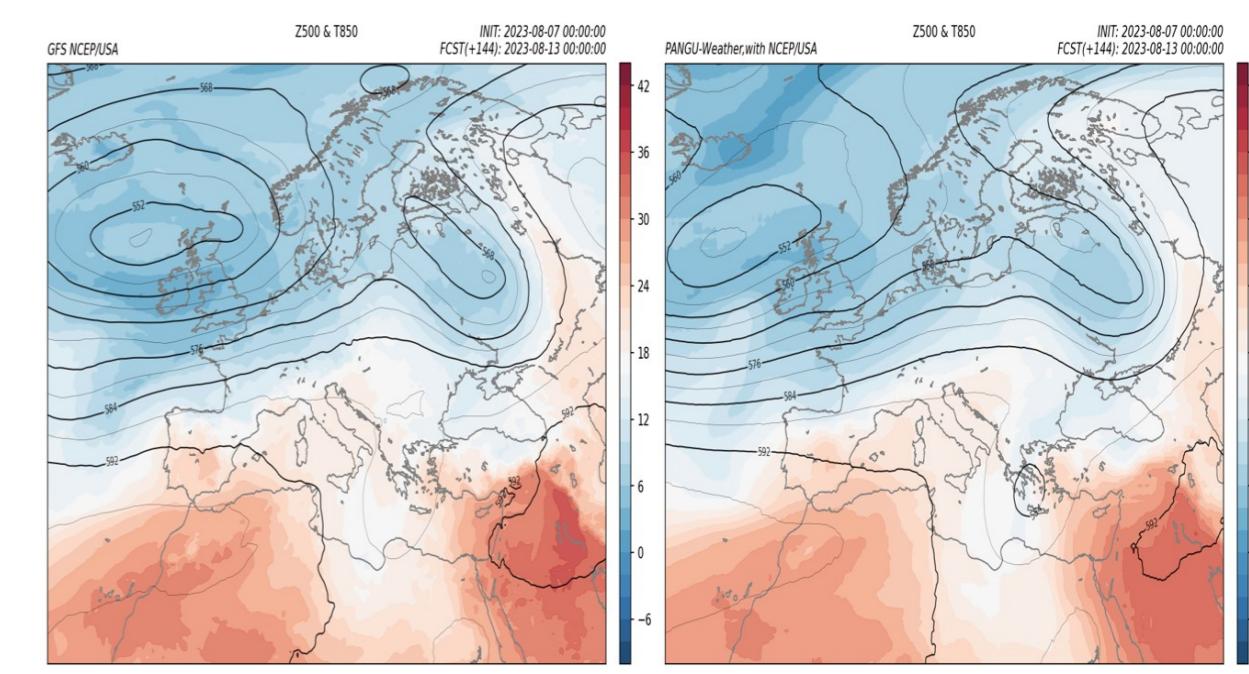


NEW!!!

### PANGU-WEATHER

**Resolution:**  
0.25 deg  
**Area:**  
Globe

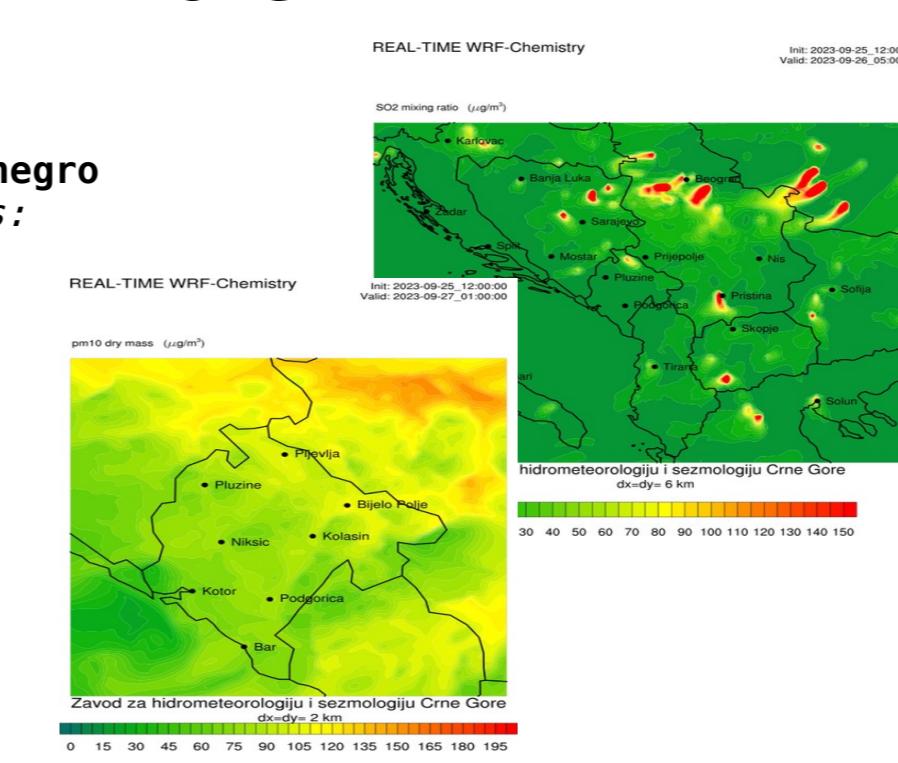
**From global models:**  
ECMWF; NCEP & ERA\_5



### WRF-Chem

**Resolutions:**  
6 km; 2 km

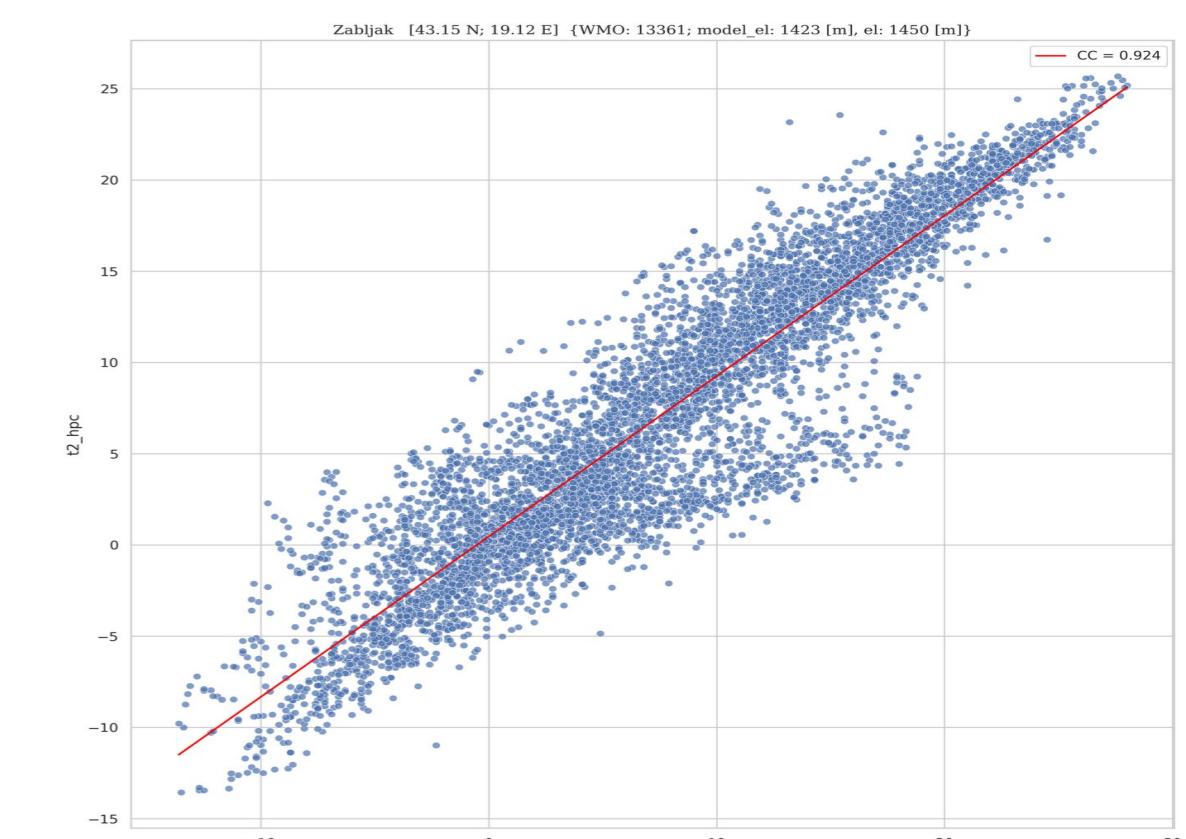
**Areas:**  
Balkan; Montenegro  
**From global models:**  
ECMWF



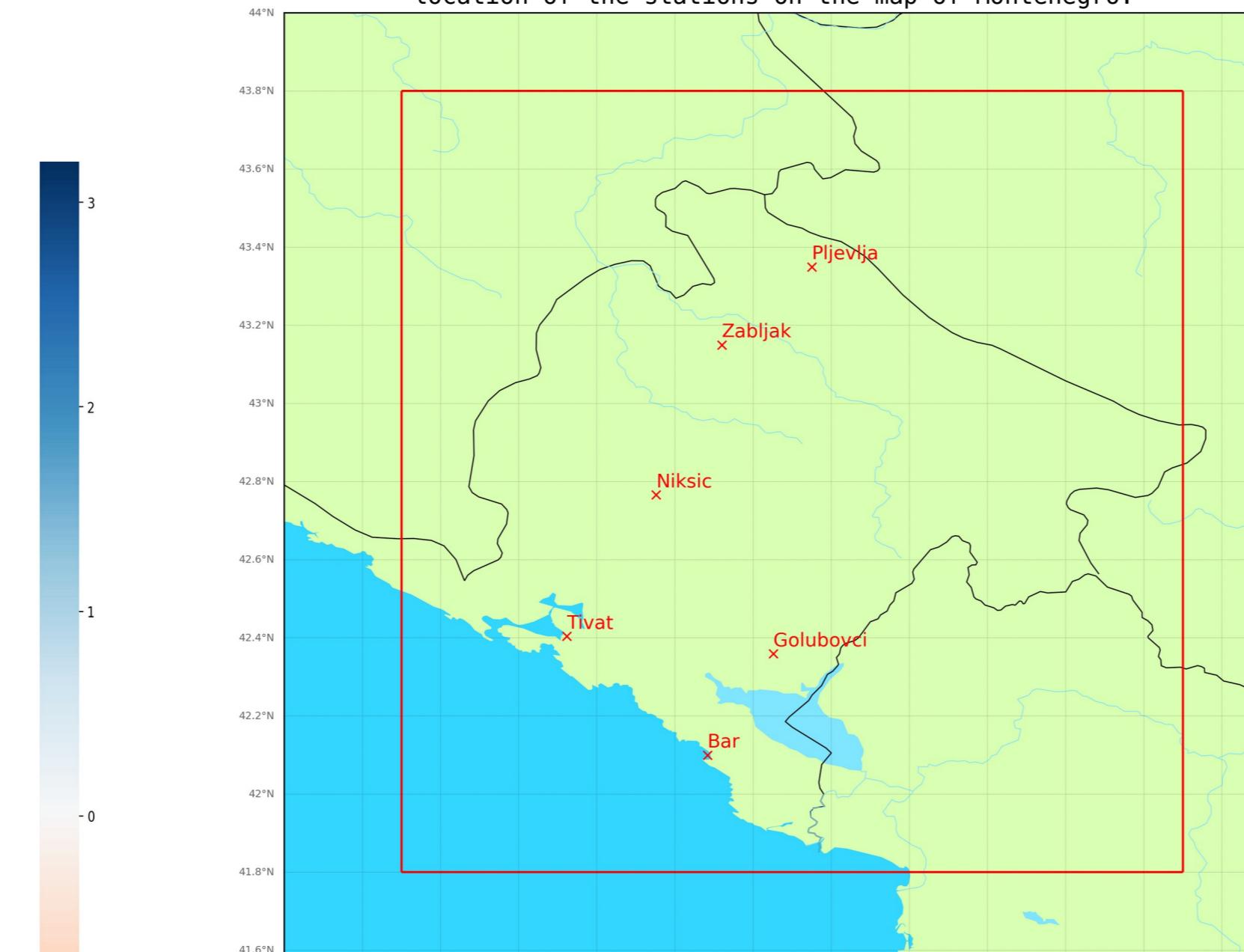
## Verification software

Z. Čećević A., Filipović L., Marčev A. Verification of temperature, wind and precipitation fields for the high-resolution WRF NMM model over the complex terrain of Montenegro. Technol. Health Care. 2023;31(4):1525-1539. doi: 10.3233/THC-229016. PMID: 36641700.

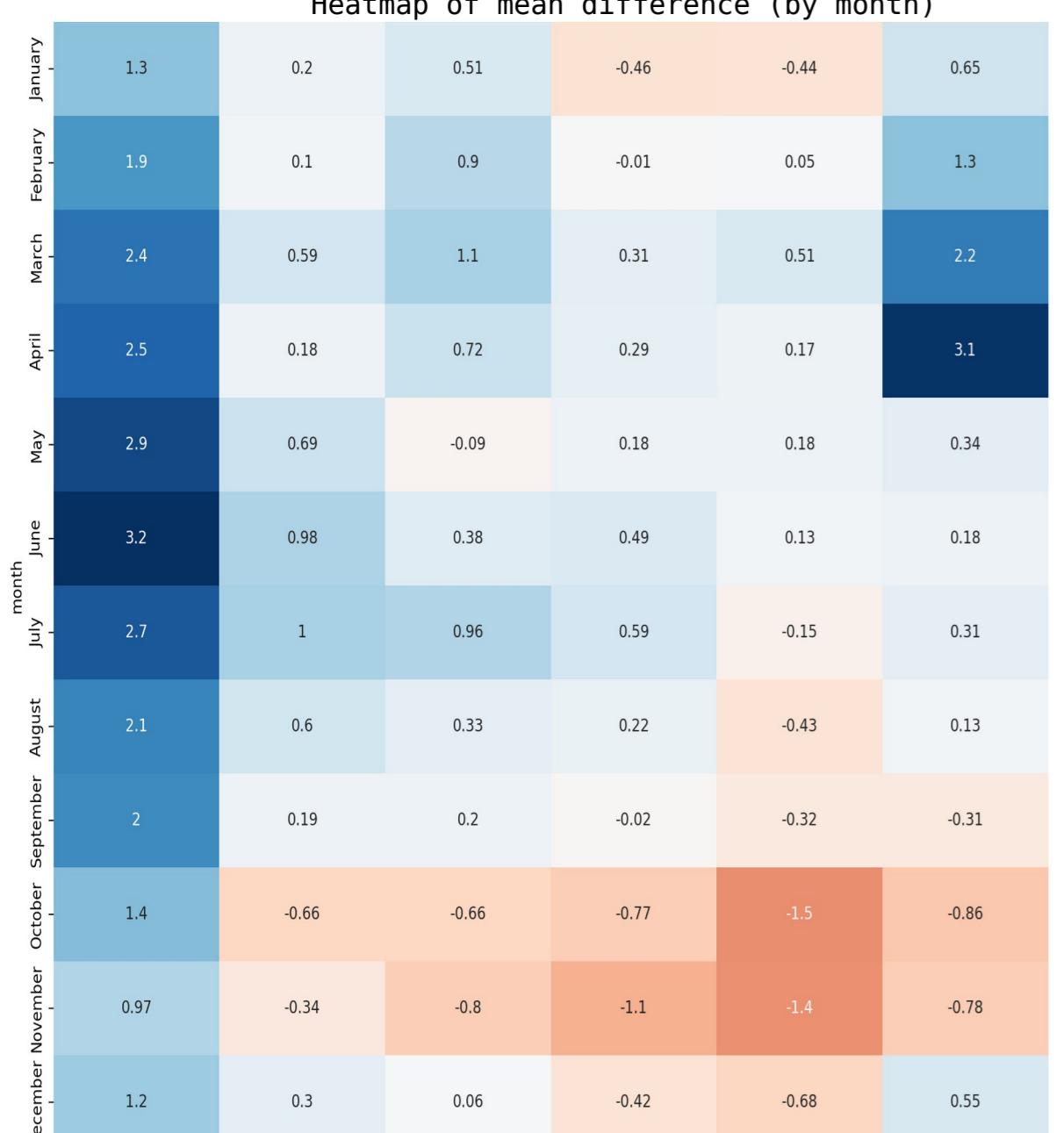
Table 1					
	Station	Latitude	Longitude	WMO number	Model elevation
Bar	42.100	19.083		13461	4
Golubovci (LYPG)	42.359	19.252		13462	54
Niksic	42.766	18.952		13459	651
Pljevlja	43.350	19.350		13363	846
Tivat (LYTV)	42.404	18.723		13457	73
Zabljak	43.150	19.120		13361	1423



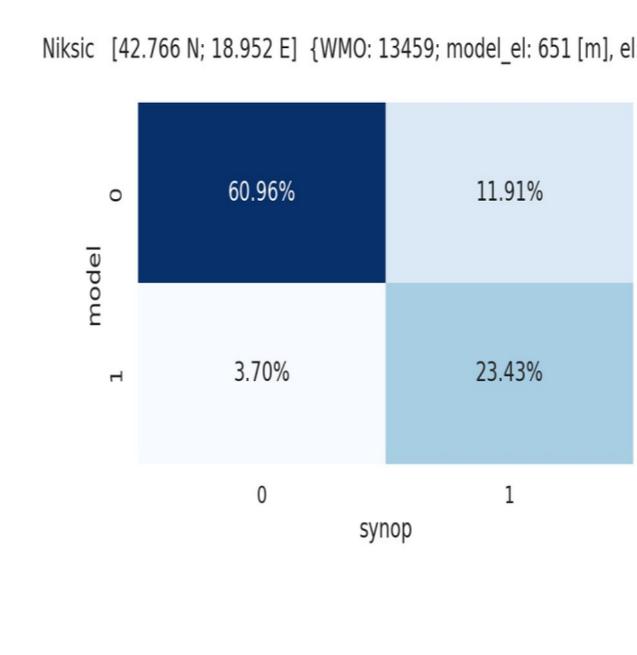
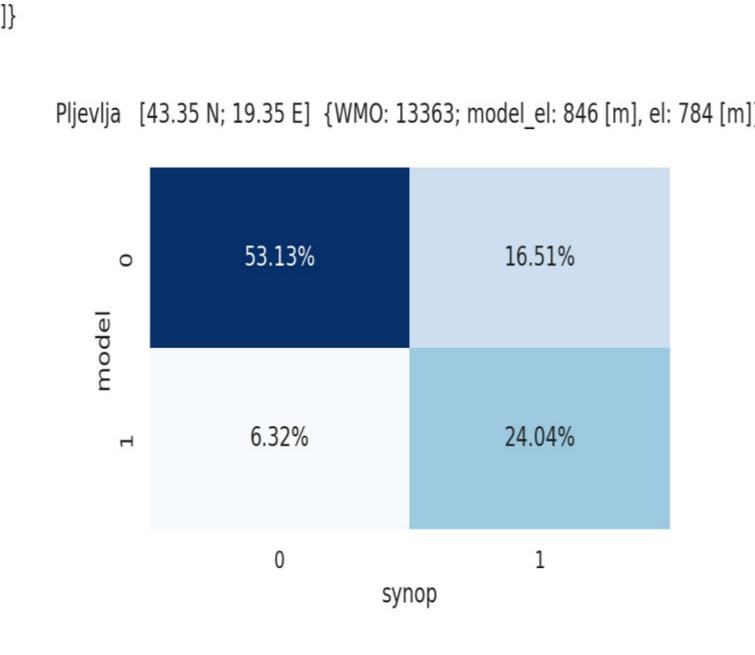
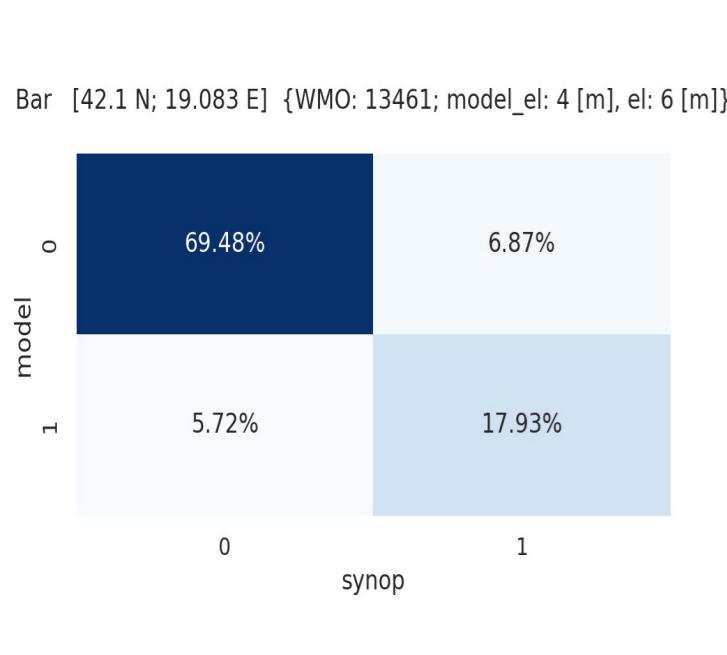
The domain of the WRF NMM model (red square) and the geographical location of the stations on the map of Montenegro.



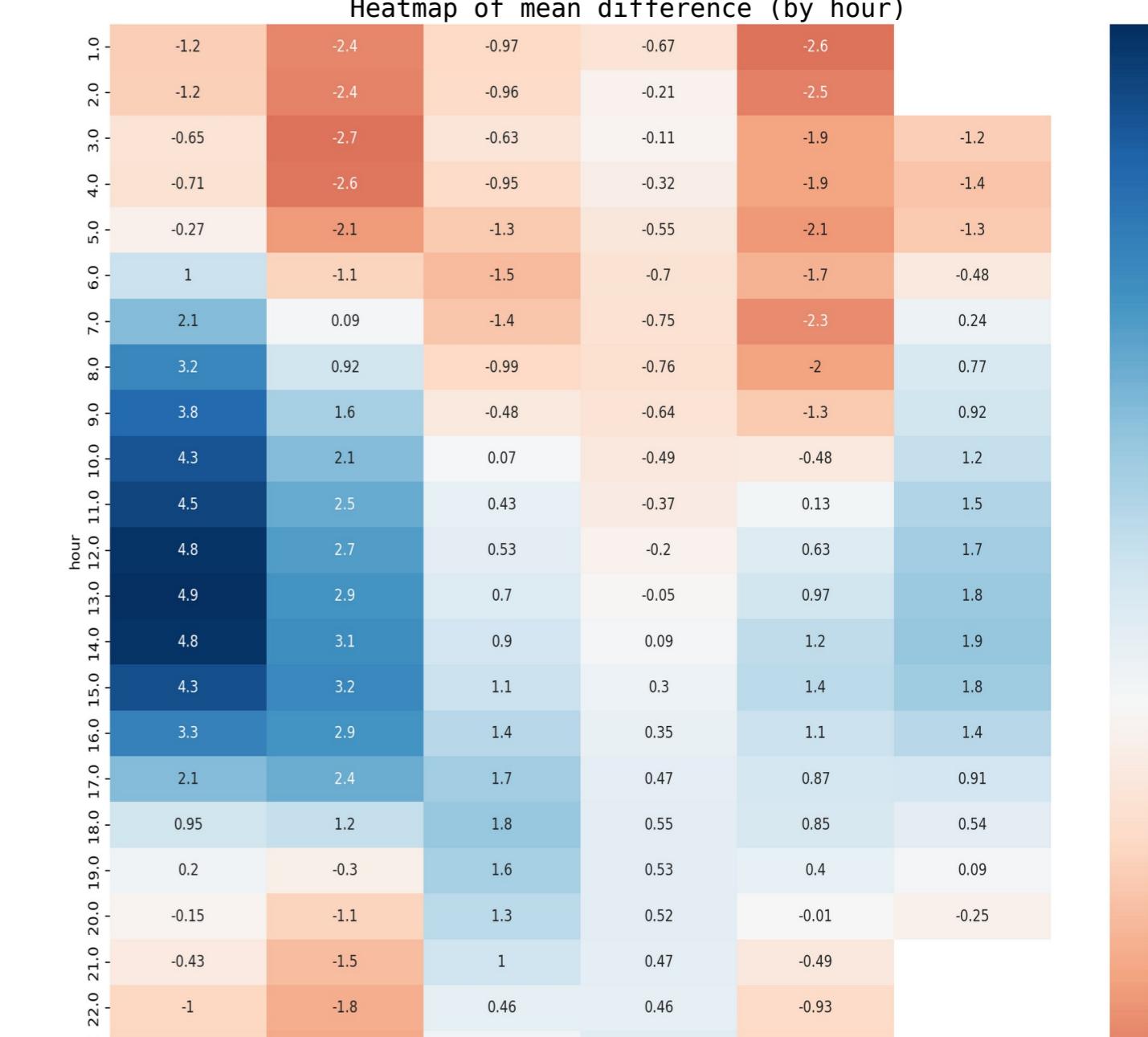
Heatmap of mean difference (by month)



Zabljak [43.15 N; 19.12 E] {WMO: 13361; model\_el: 1423 [m], el: 1450 [m]}



Heatmap of mean difference (by hour)



Niksic [42.766 N; 18.952 E] {WMO: 13459; model\_el: 651 [m], el: 647 [m]}

