

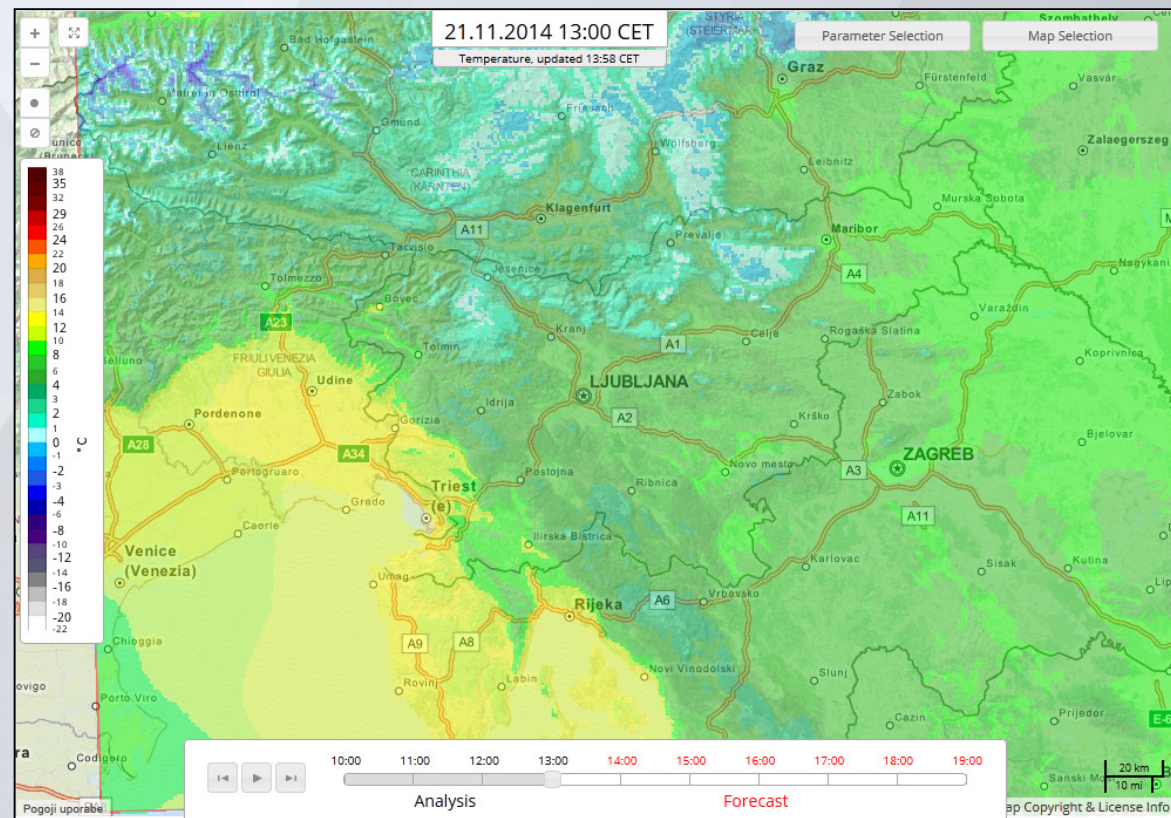


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SLOVENIAN ENVIRONMENT AGENCY (ARSO)
METEOROLOGICAL OFFICE



Forecast experience in National Meteorological Service of Slovenia



2nd ALADIN Forecasters meeting– Lisbon, PT – Oct 2015,
Janko Merše



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New building for operational services since 2015



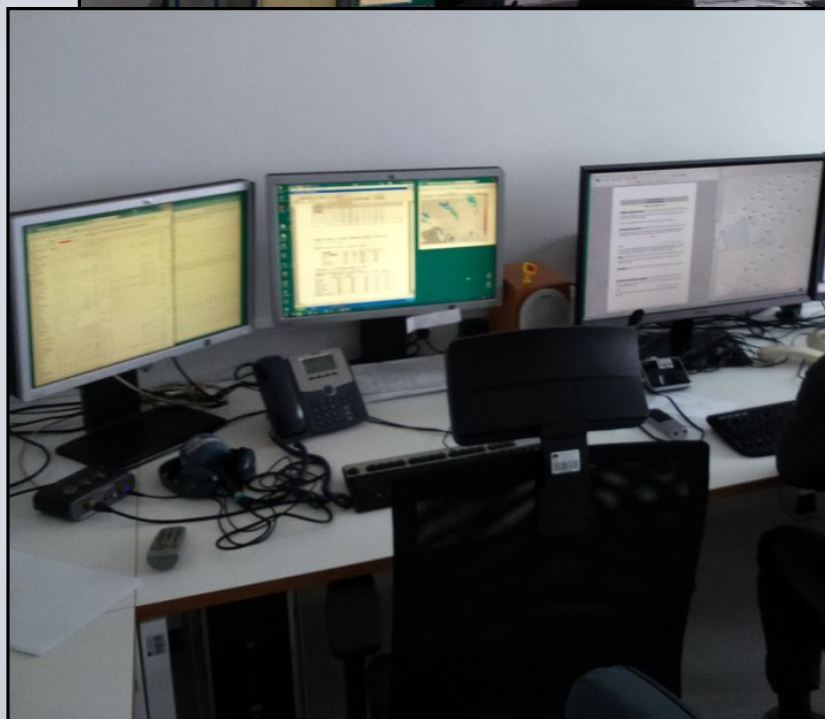
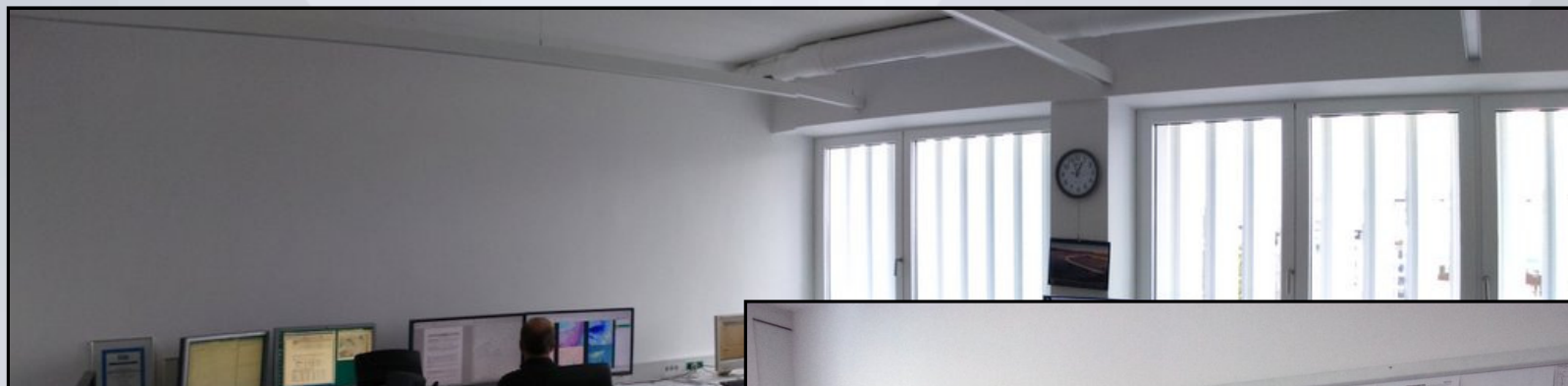
Naložba v vašo prihodnost
OPERACIJO DELNO FINANCIRA EVROPSKA UNIJA
Kohezijski sklad



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Forecaster's workroom





Model products in operational use

- ECMWF
 - Deterministic + EPS
- ALADIN
 - 4.4 km local RUC DA (ECMWF, ARPEGE),
 - Legacy:
 - 4.4 km local DA 43 v.levels (ARPEGE),
 - 9 km (ARPEGE)
- LAEF
- PEPS
- NCEP GFS
 - Deterministic + EPS
- ARPEGE
- DWD
 - Global + LM
- NMM experimental

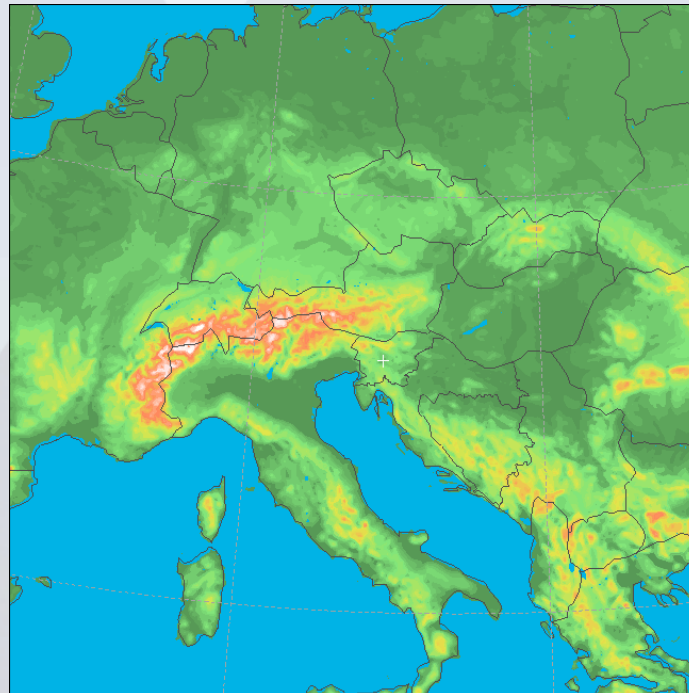


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ALADIN configuration

- CY38T1, ALARO-0 baseline
- 4.4 km horizontal grid spacing, 87 model levels
- linear spectral elliptic truncation, 180 s time-step
- Lambert projection
 - 421x421 points, (with extension zone 432x432), E215x215





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ALADIN configuration

Assimilation cycle:

- 3-hourly 3D-Var assimilation cycle (RUC),
- B-matrix sampled from downscaled ECMWF ensemble members,
- CANARI surface analysis using surface observations (T and RH at 2 m),
- coupling frequency 1 hour,
- space consistent coupling, no digital filter initialization,
- observations: OPLACE data and local observations (SYNOP, Mode-S MRAR).

Availability

- four production runs per day: 00, 06, 12, 18, forecast up to 72 hours, additionally four runs 03, 09, 15, 21 up to 36 hours
- coupling at every 3 hours, LBC from ECMWF Boundary Conditions Optional project (time lagged coupling)
 - parallel suite with ARPEGE coupling

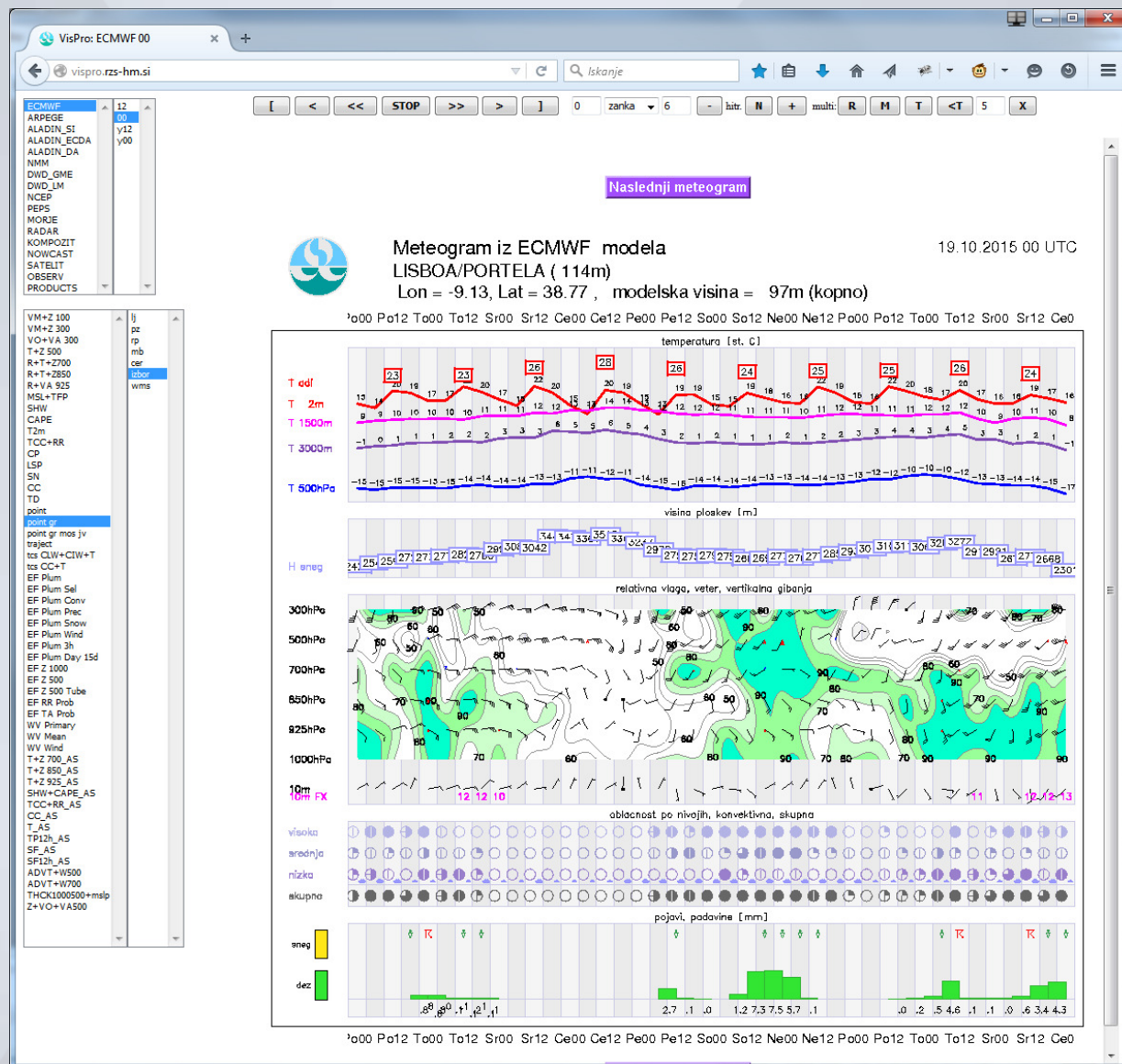
RUN	LBC ECMWF	integraton	LBC ARPEGE	integration
00	18 run	2:20 - 3:00	00 run	3:00-3:40
03	18	5:20 - 5:40		
06	00	8:20 - 9:00	06	9:50-10:30
09	00	11:20 - 11:40		
12	06	14:20 - 15:00	12	14:40-15:20
15	06	17:20 - 17:40		
18	12	20:20 - 21:00	18	21:50-22:40
21	12	23:20 - 23:40		



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User interface to pre-prepared products

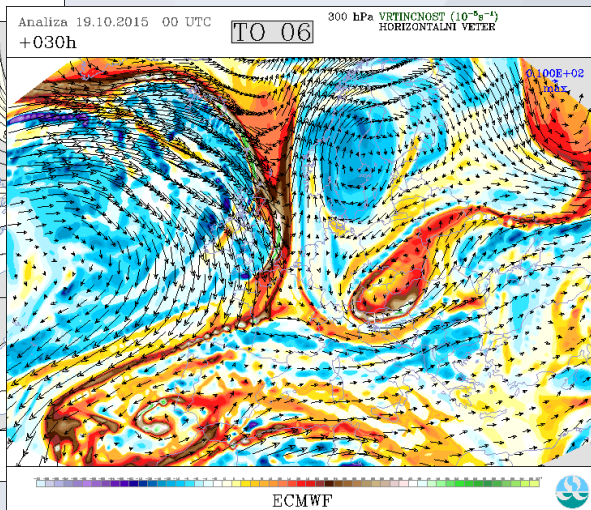
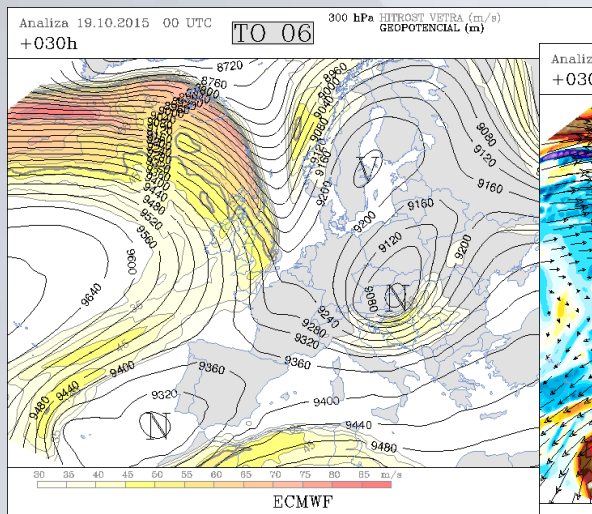




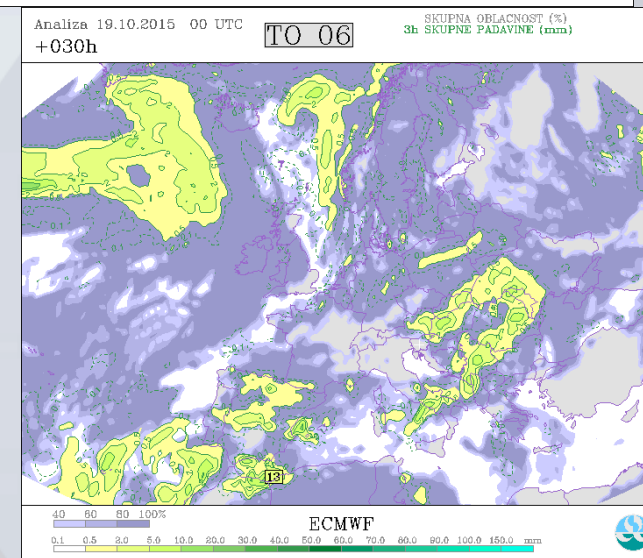
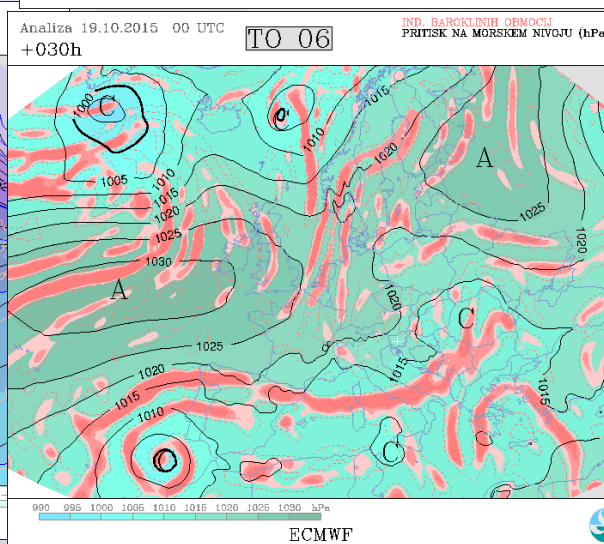
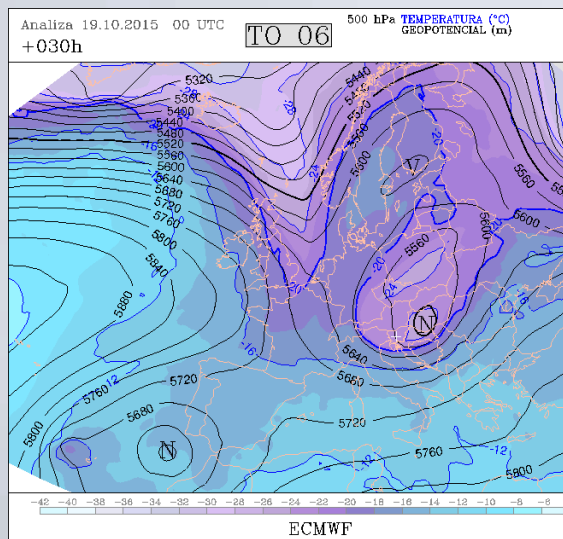
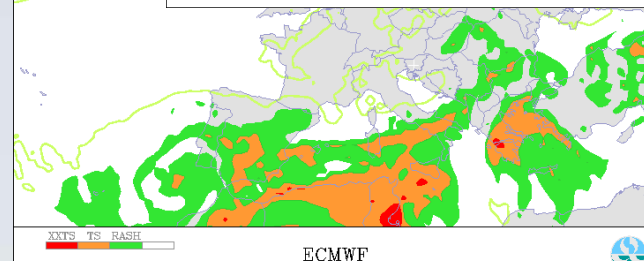
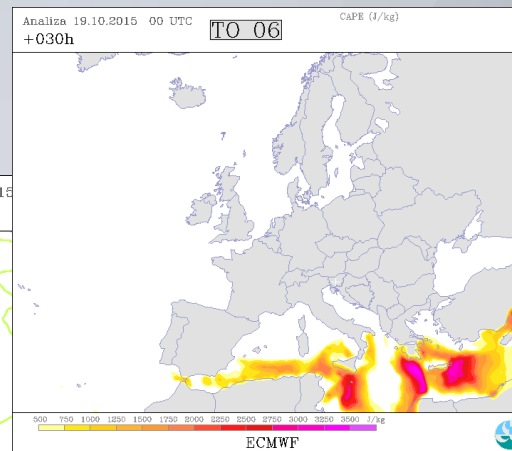
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Basic model products



Analiza 19.10.2015
+030h

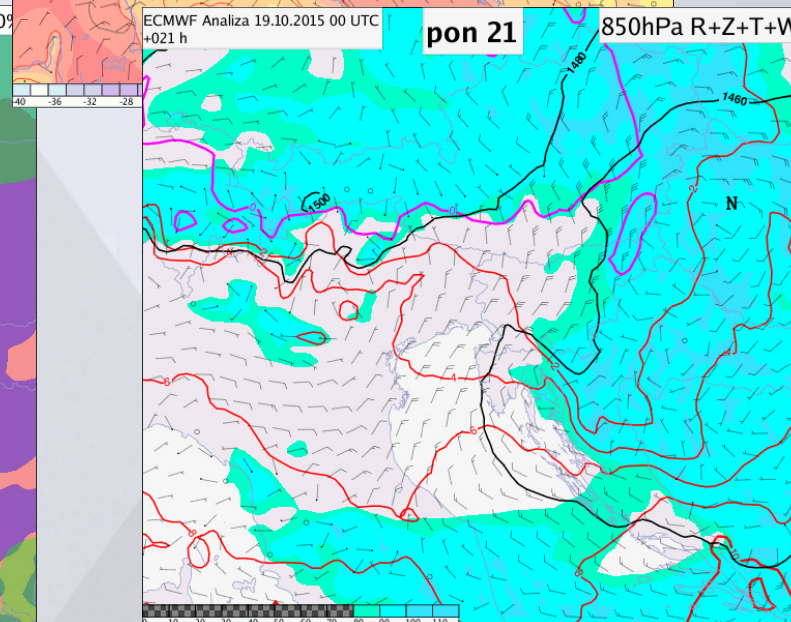
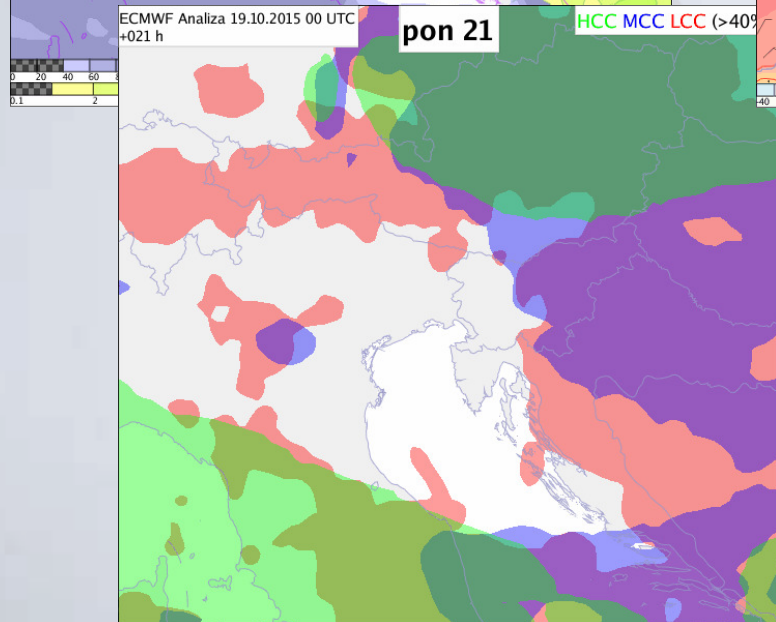
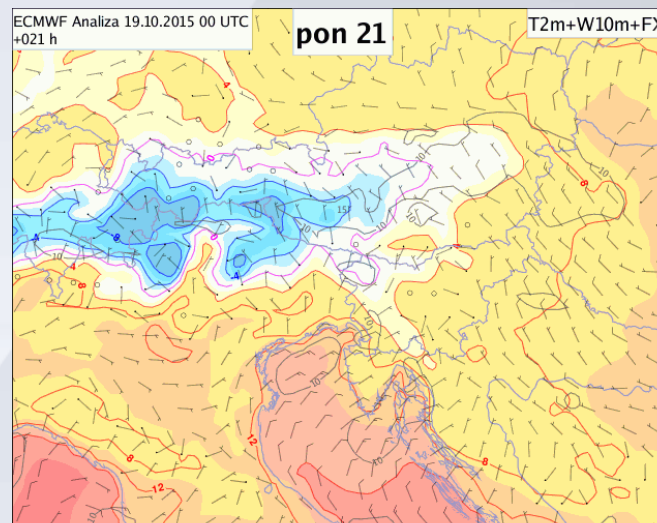
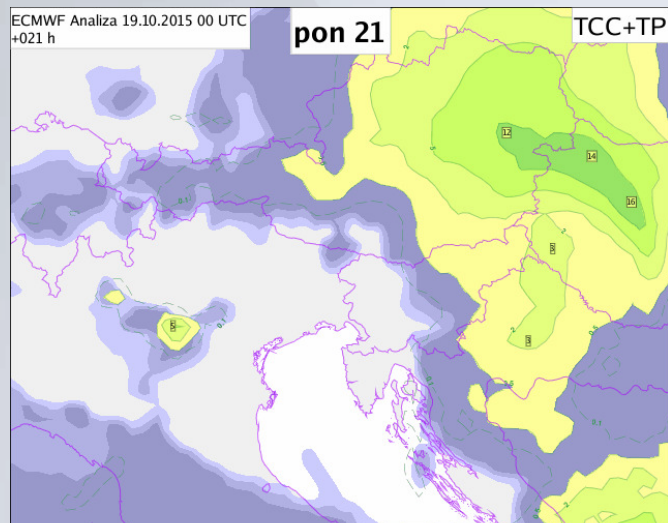




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Basic model products

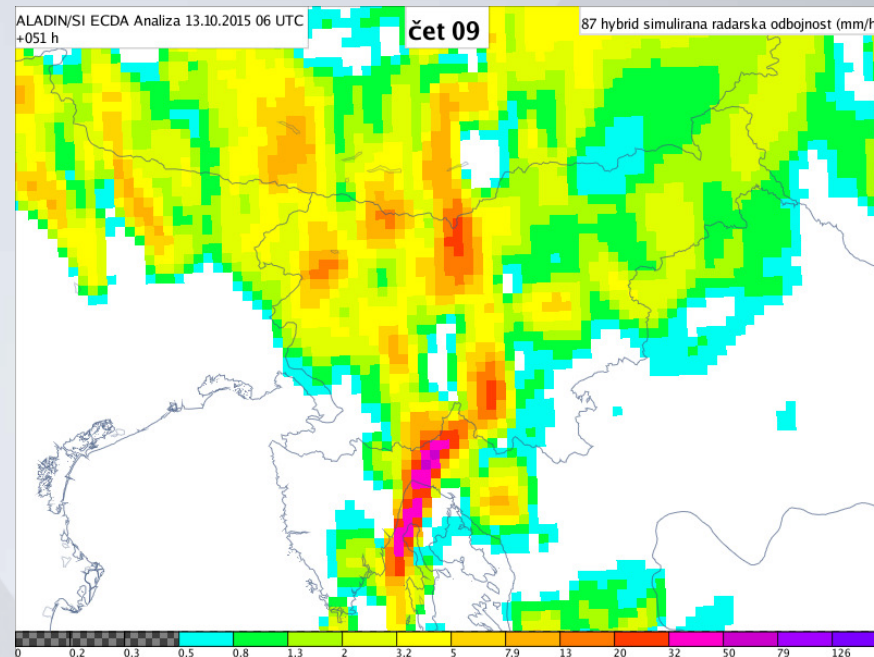
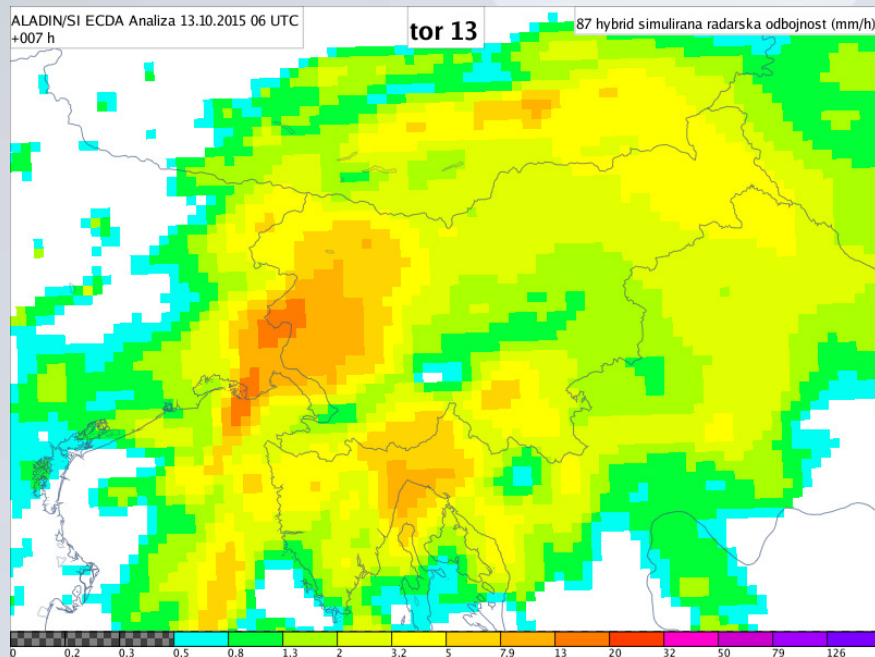




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Basic model products

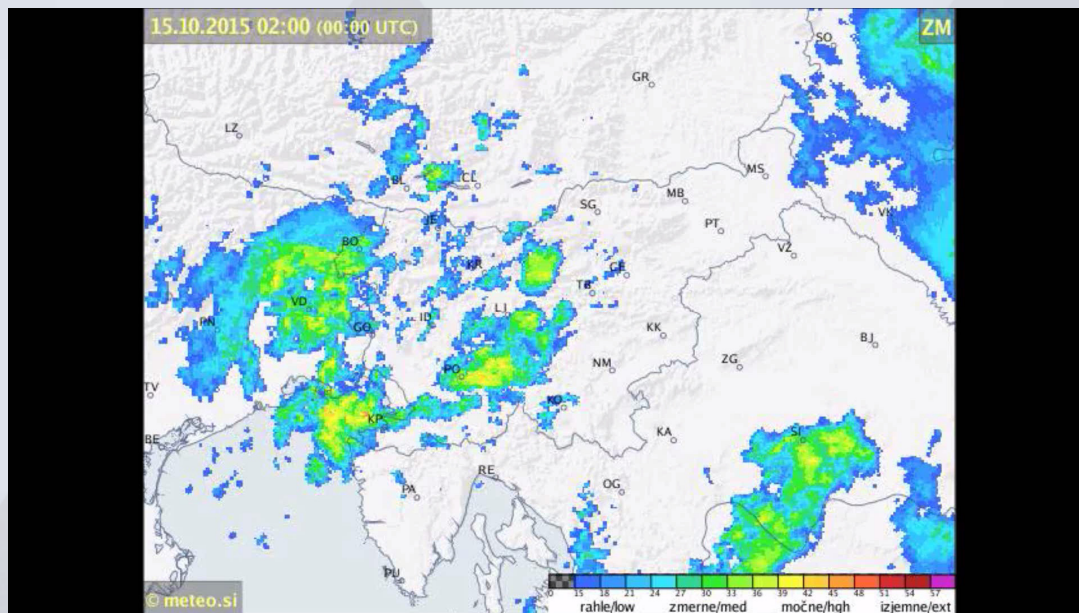
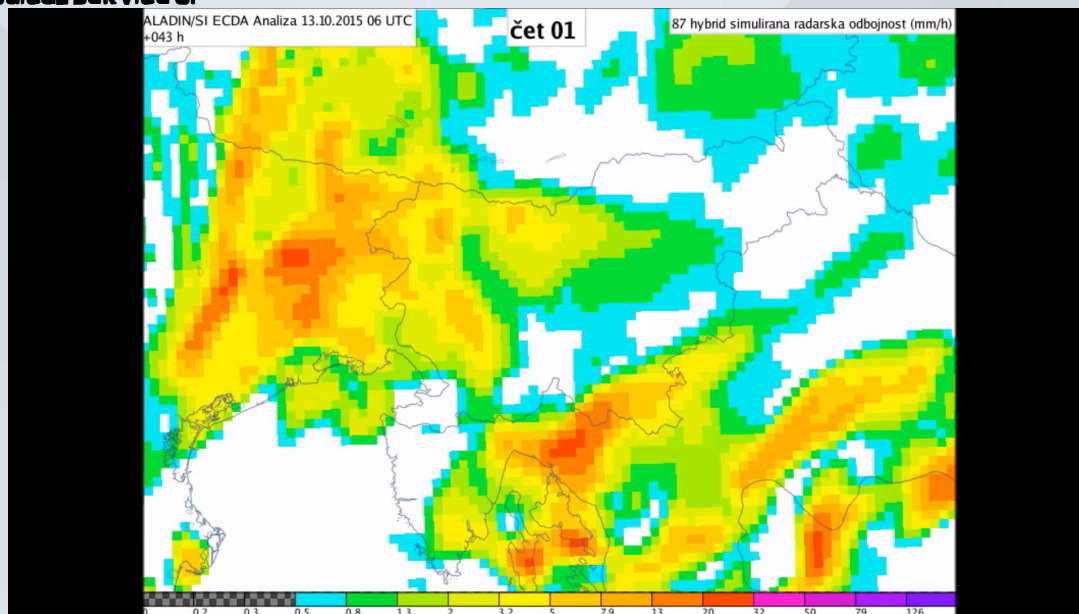




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Model vs Reality



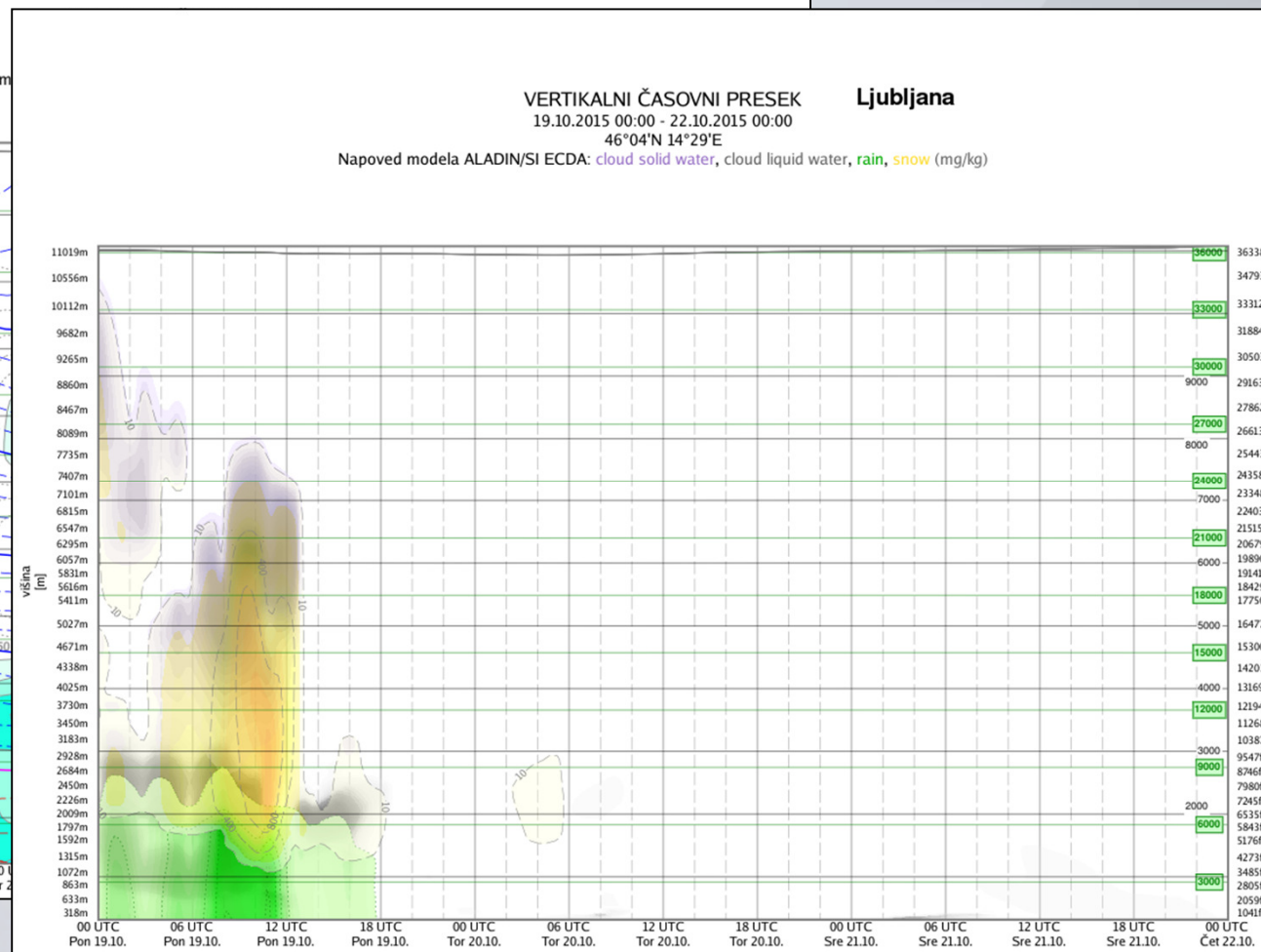
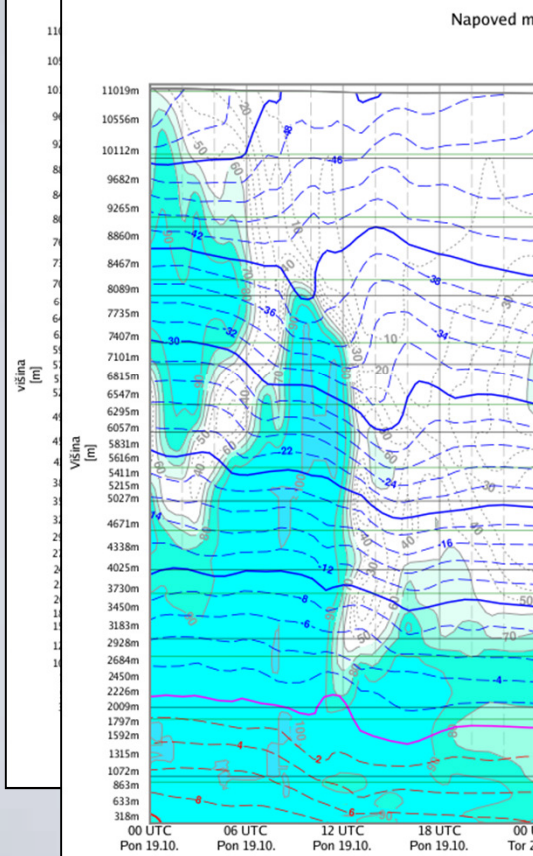


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Basic model products

VERTIKALNI ČASOVNI PRESEK





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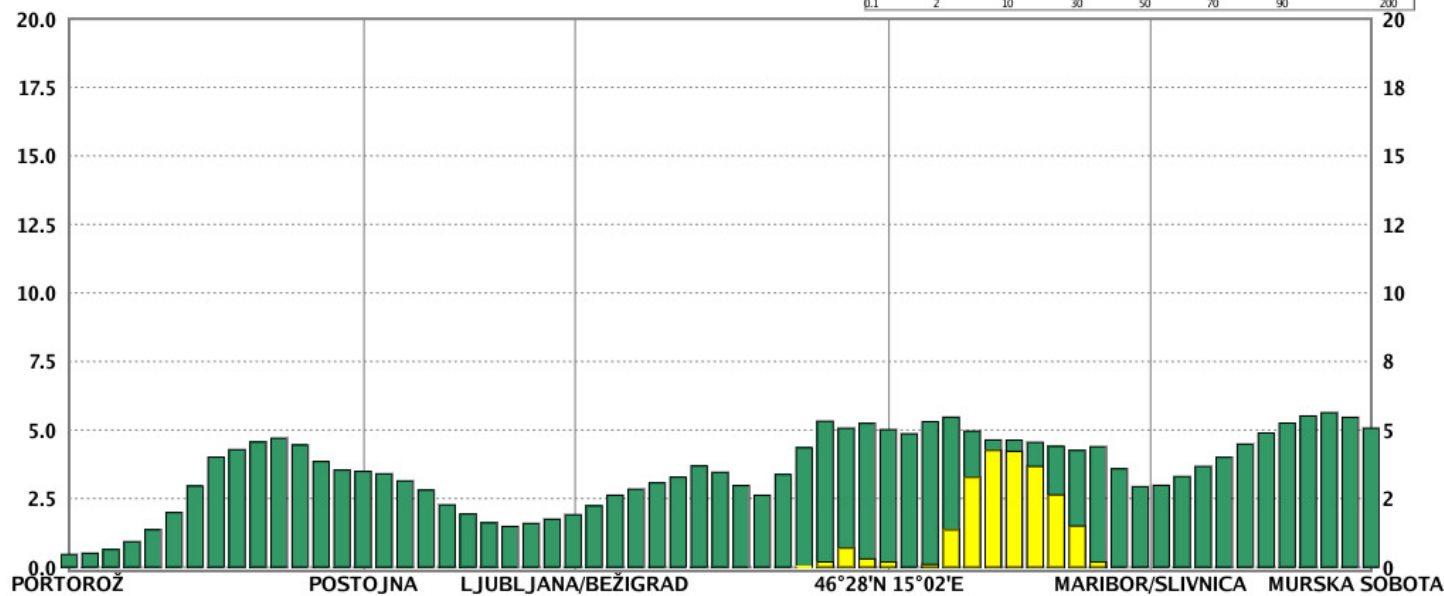
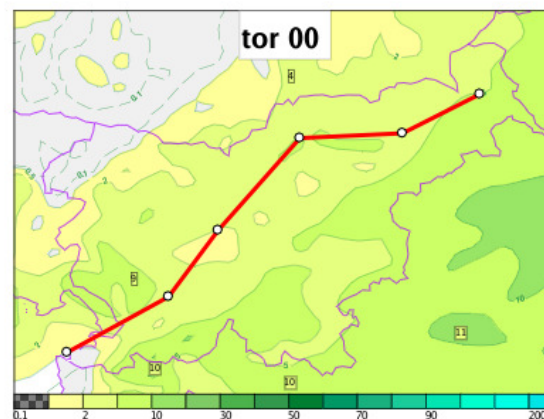
VZDOLŽNI PREREZ: PORTOROŽ - MURSKA SOBOTA

12 h akumulacija padavin

od 19.10.2015 12:00 do 20.10.2015 00:00 UTC

Model ALADIN/SI ECDA (izračun: 19.10.2015 12:00 UTC)

akumulacija padavin (mm) s tipom padavin (skupne padavine, sneg)

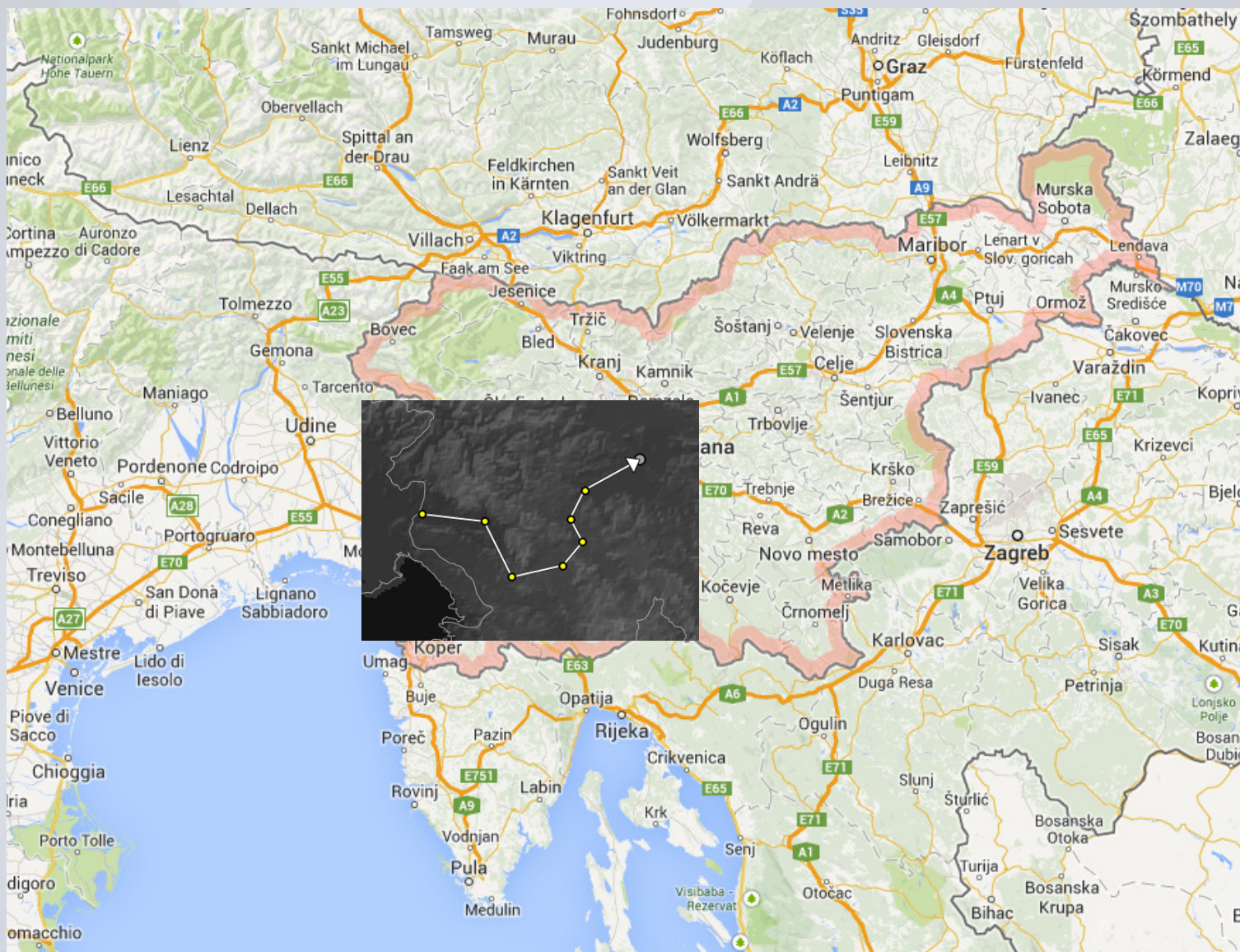




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Precipitation forecast along high way

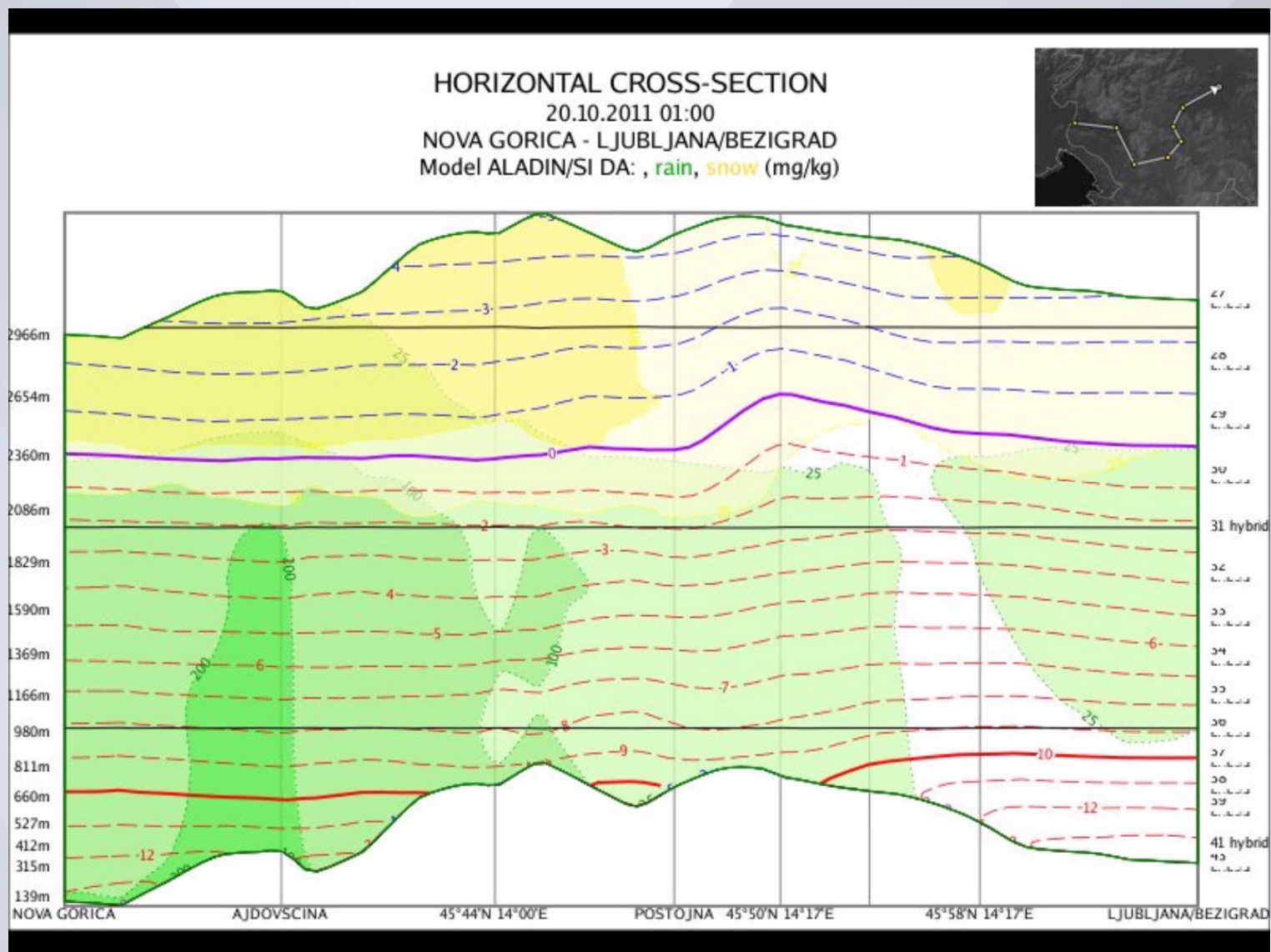




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Precipitation forecast along high way





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Freezing rain event (February 2014)



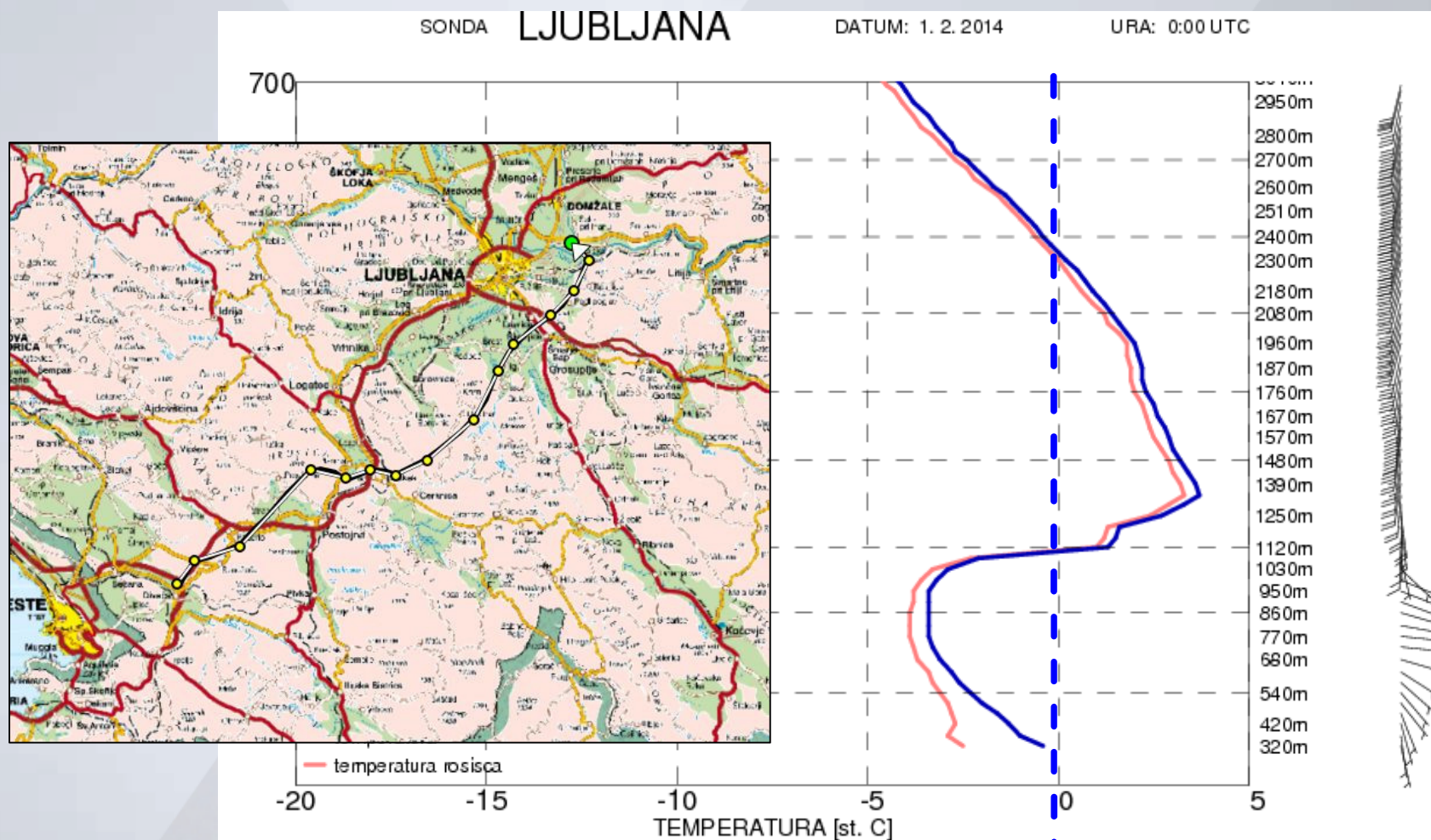
source: www.dnevnik.si



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Freezing rain event (February 2014)

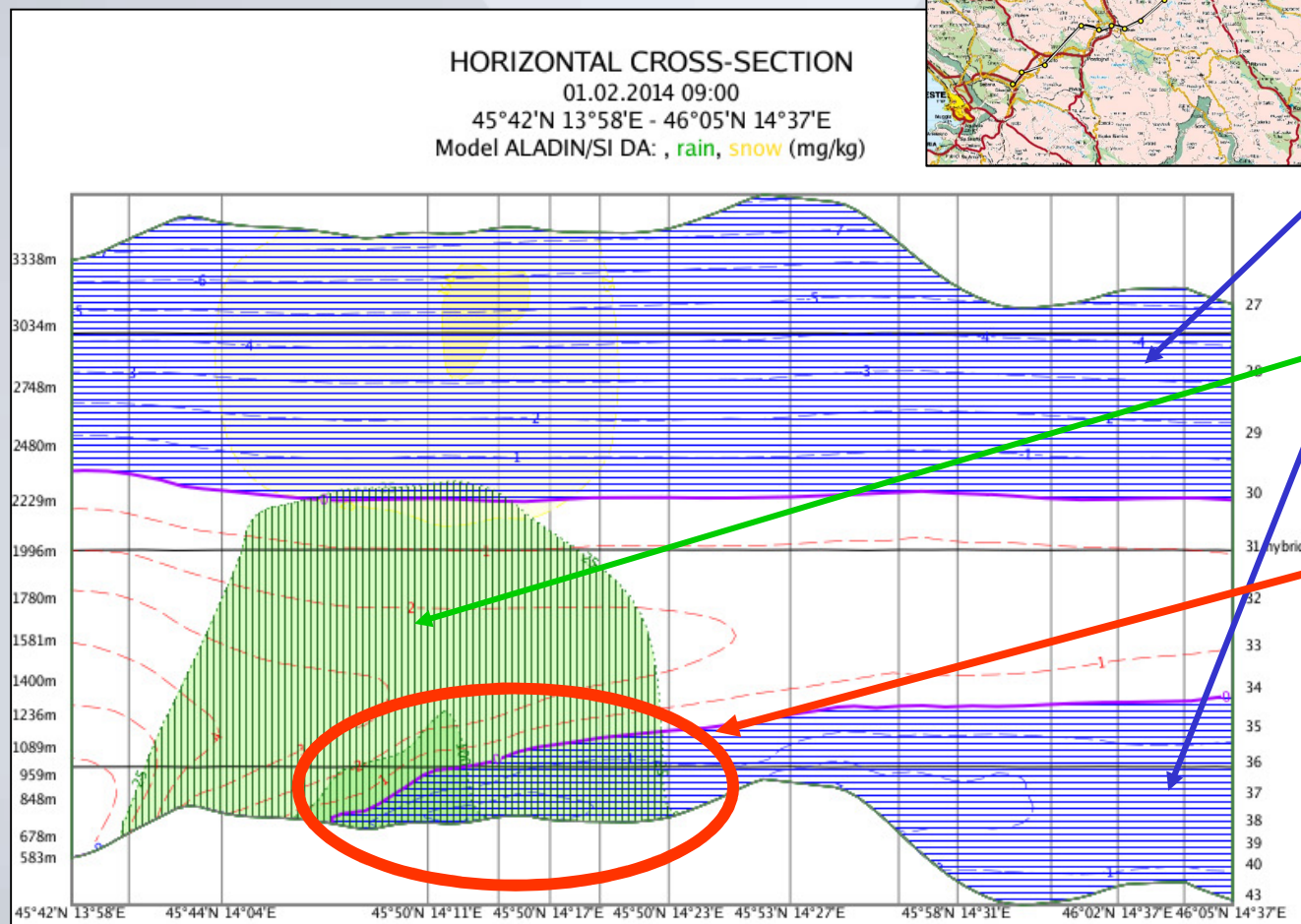




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Freezing rain event (February 2014)

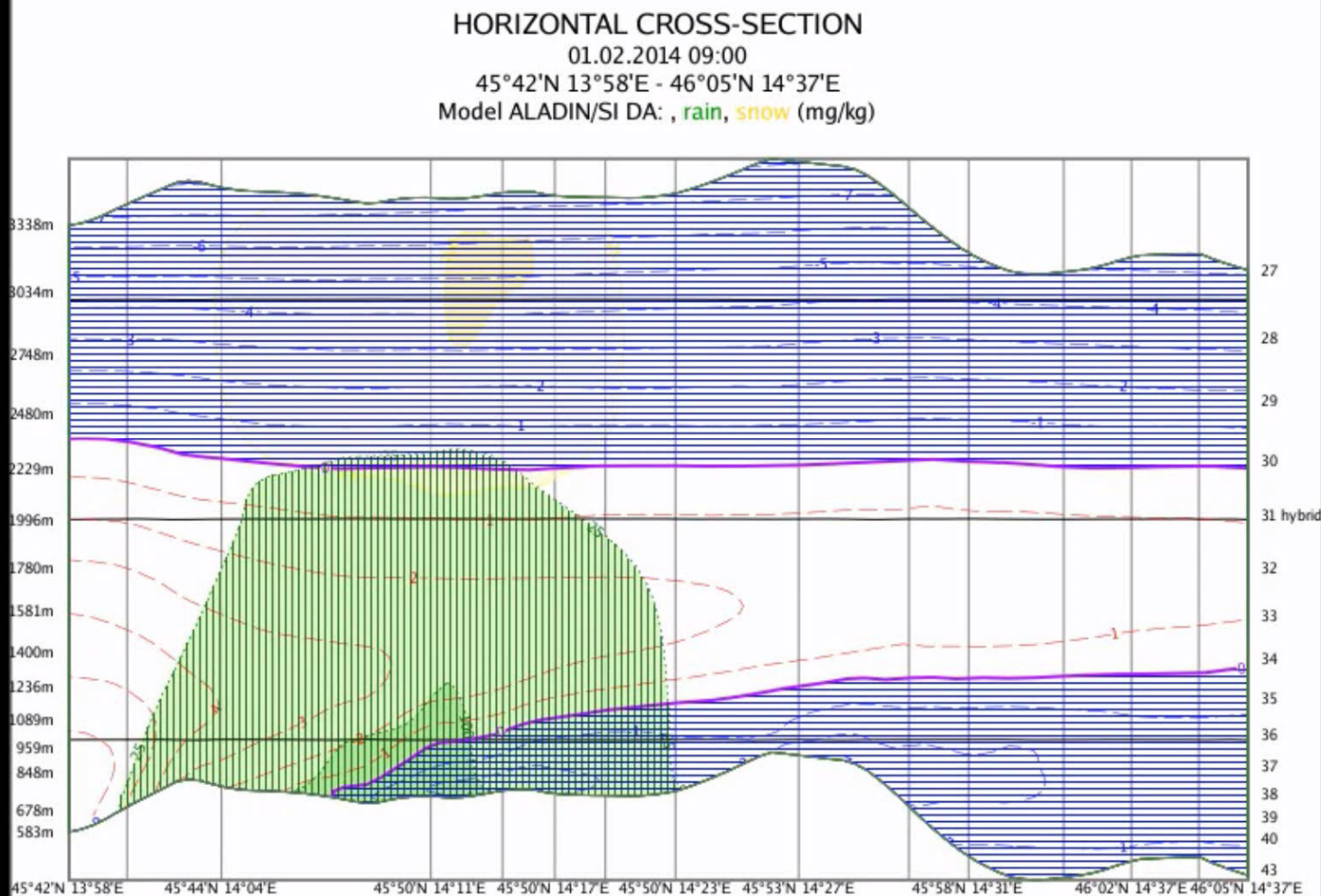


horizontal lines:
 $T < 0\text{ C}$

vertical lines:
liquid
precipitation

cross pattern:
potential freezing
rain area

Freezing rain event (February 2014)

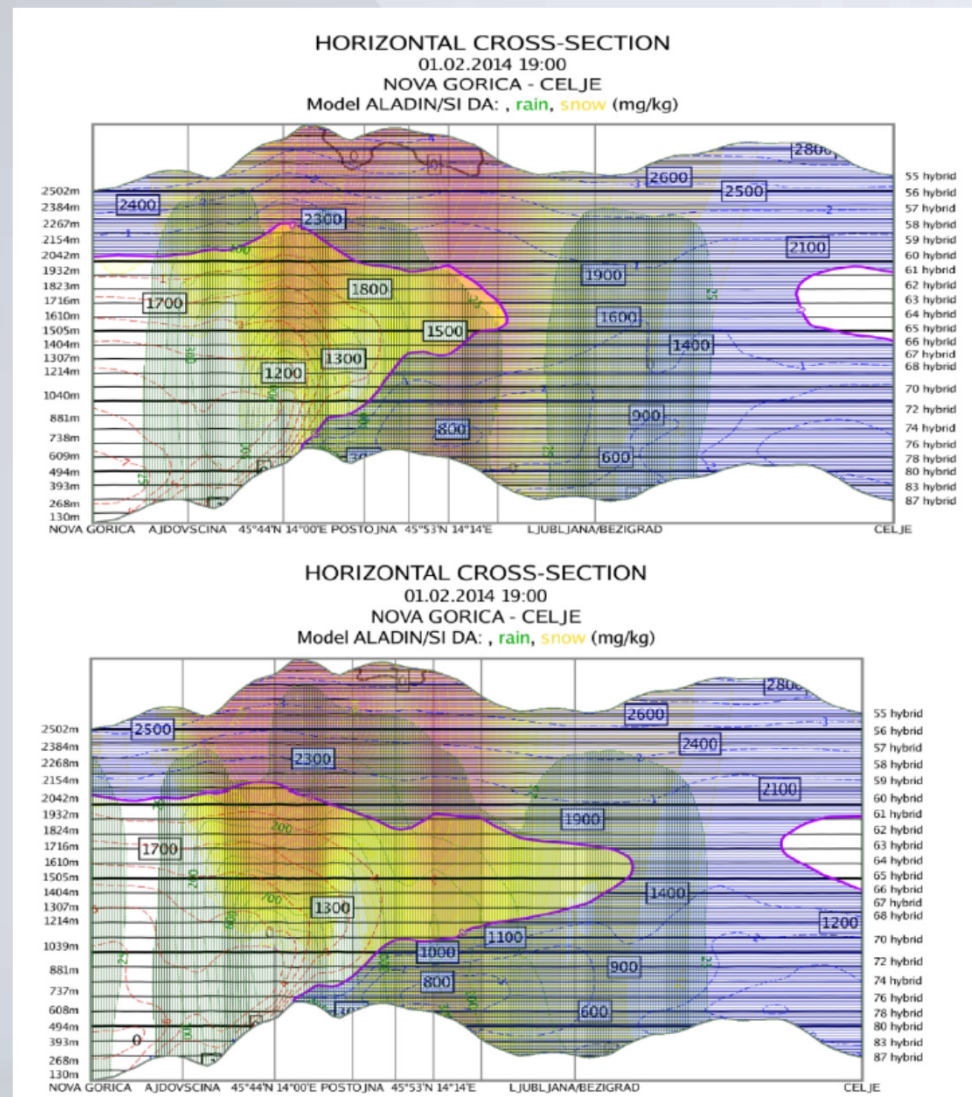




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Freezing rain event (February 2014)



Without Mode-S

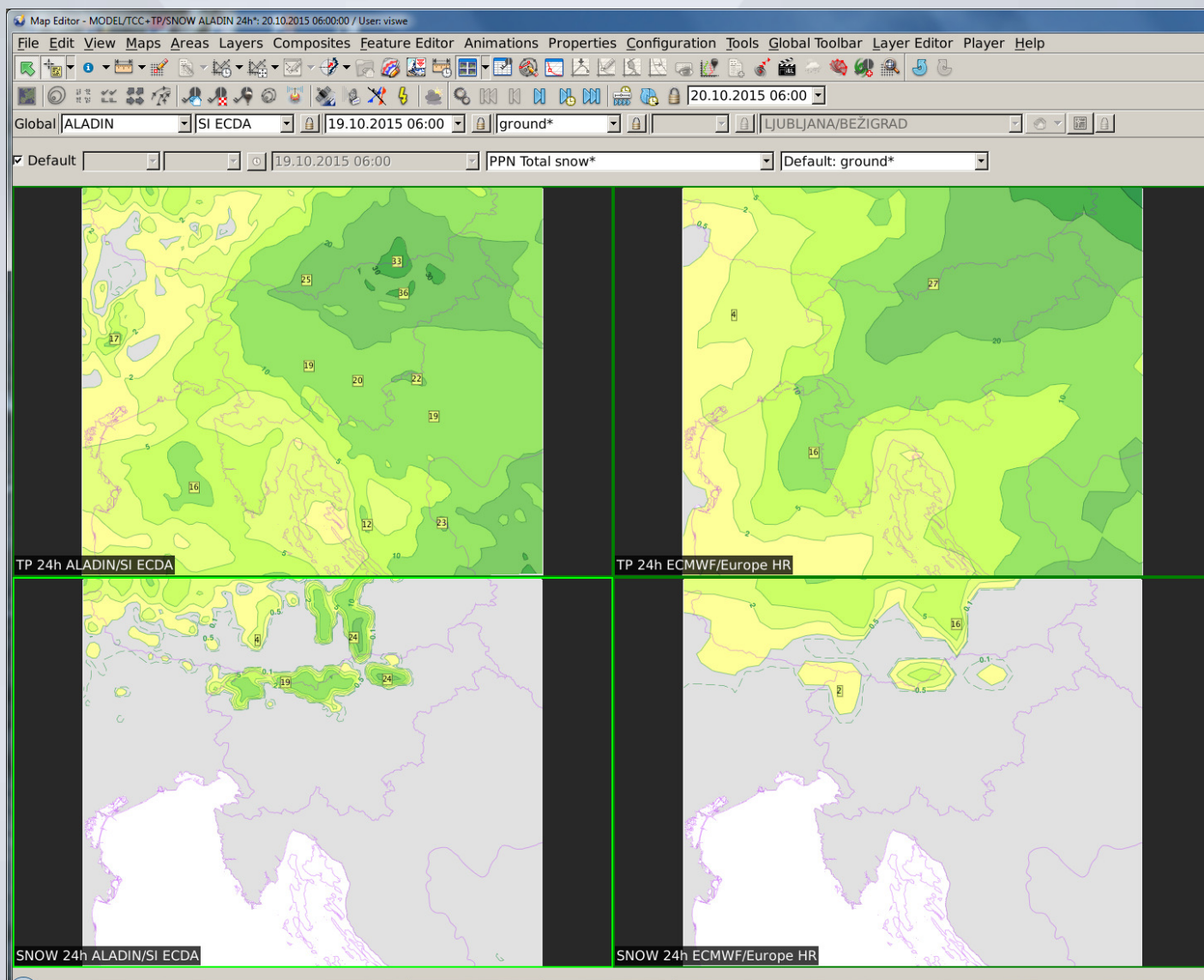
With Mode-S



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Visual Weather workstation

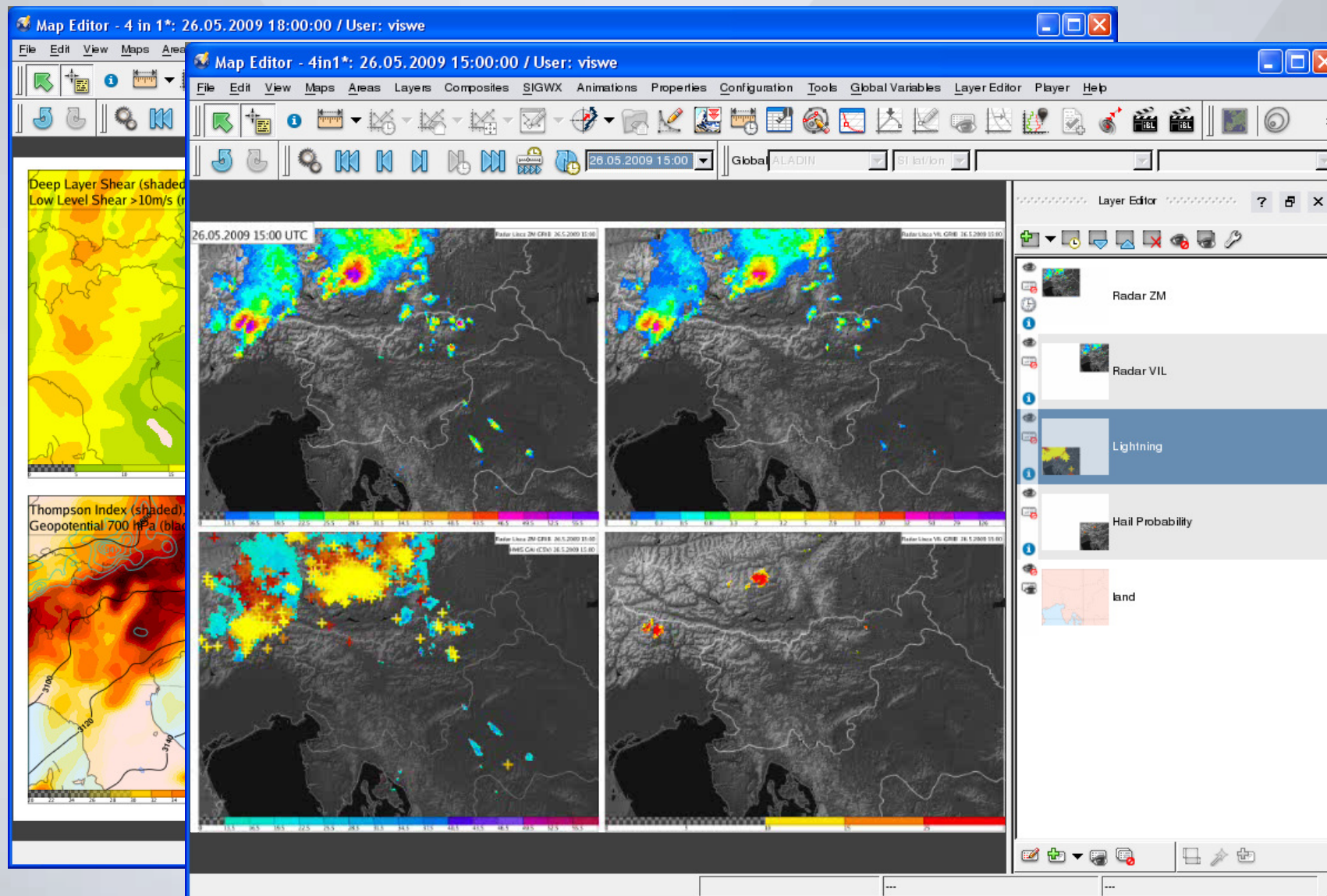




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Visual Weather





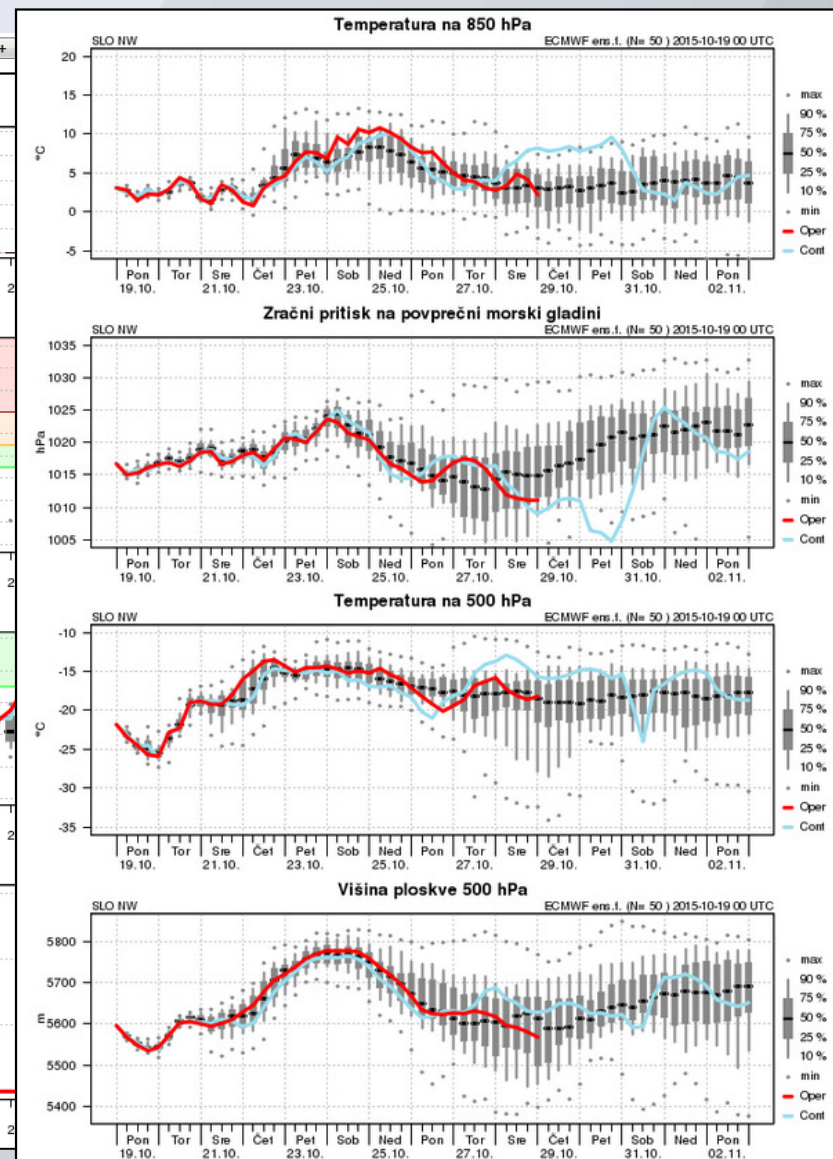
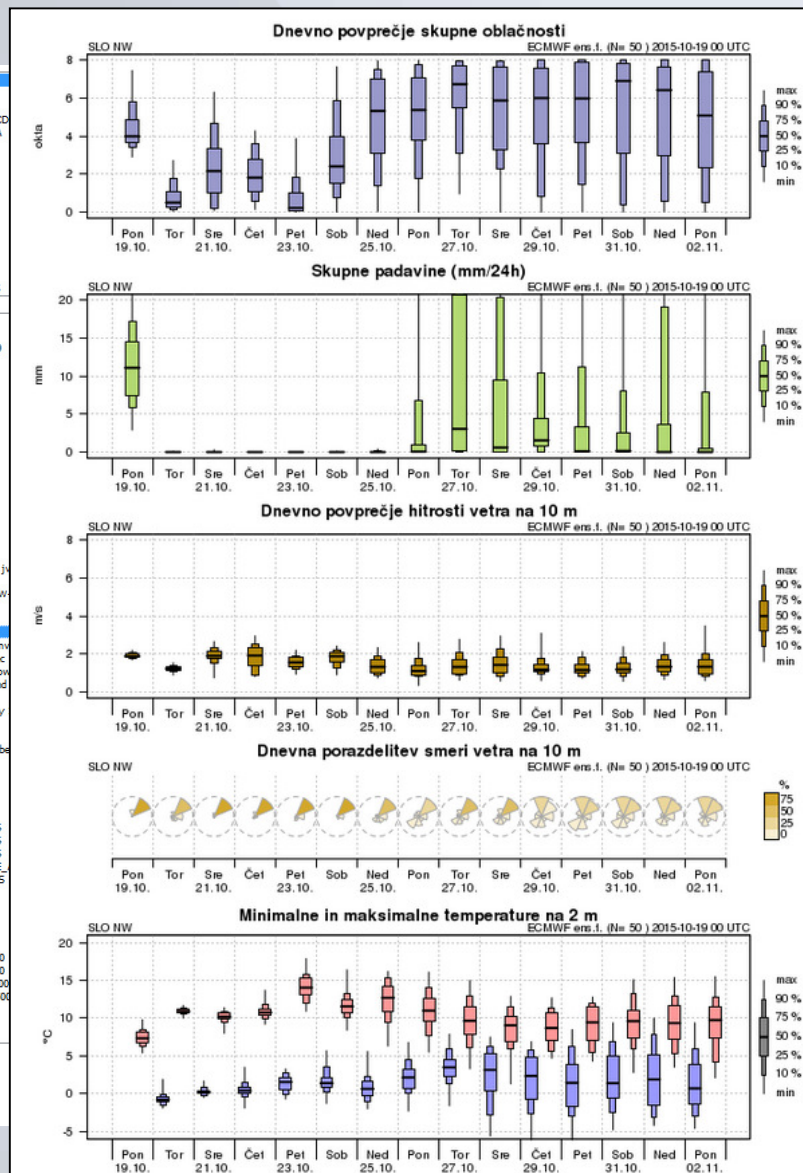
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Basic EPS products

ECMWF
ARPEGE
ALADIN_SI
ALADIN_ECD
ALADIN_DA
NMM
DWD_GME
DWD_LM
NCEP
PEPS
MORJE
RADAR
KOMPROZIT
NOWCAST
SATELIT
OBSERV
PRODUCTS

VM+Z 100
VM+Z 300
VO+VA 300
T+Z 500
R+T+Z700
R+T+Z850
R+VA 925
MSL+TFP
SHW
CAPE
T2m
TCC+RR
CP
LSP
SN
CC
TD
point
point gr
point gr mos j
traject
tes CLW+CIW
tes CC+T
EF Plum
EF Plum Conv
EF Plum Prec
EF Plum Snow
EF Plum Wind
EF Plum 3h
EF Plum Day
EF Z 1000
EF Z 500
EF Z 500 Tube
EF RR Prob
EF TA Prob
WV Primary
WV Mean
WV Wind
T+Z 700_AS
T+Z 850_AS
T+Z 925_AS
SHW+CAPE
TCC+RR_AS
CC_AS
T_AS
TPl2h_AS
SF_AS
SF12h_AS
ADVT+W500
ADVT+W700
THCK1000500
Z+VO+VA500

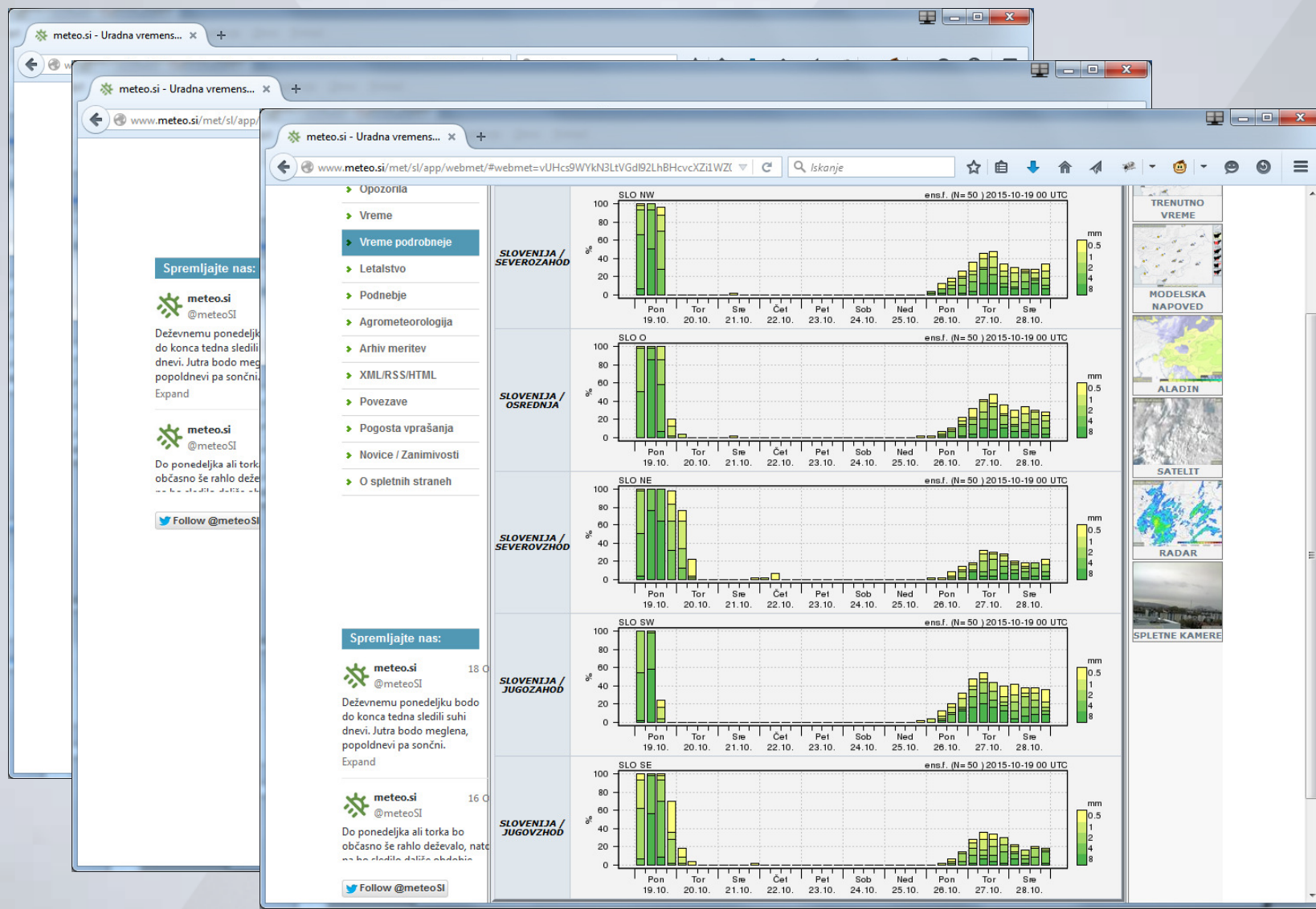




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EPS products for general public

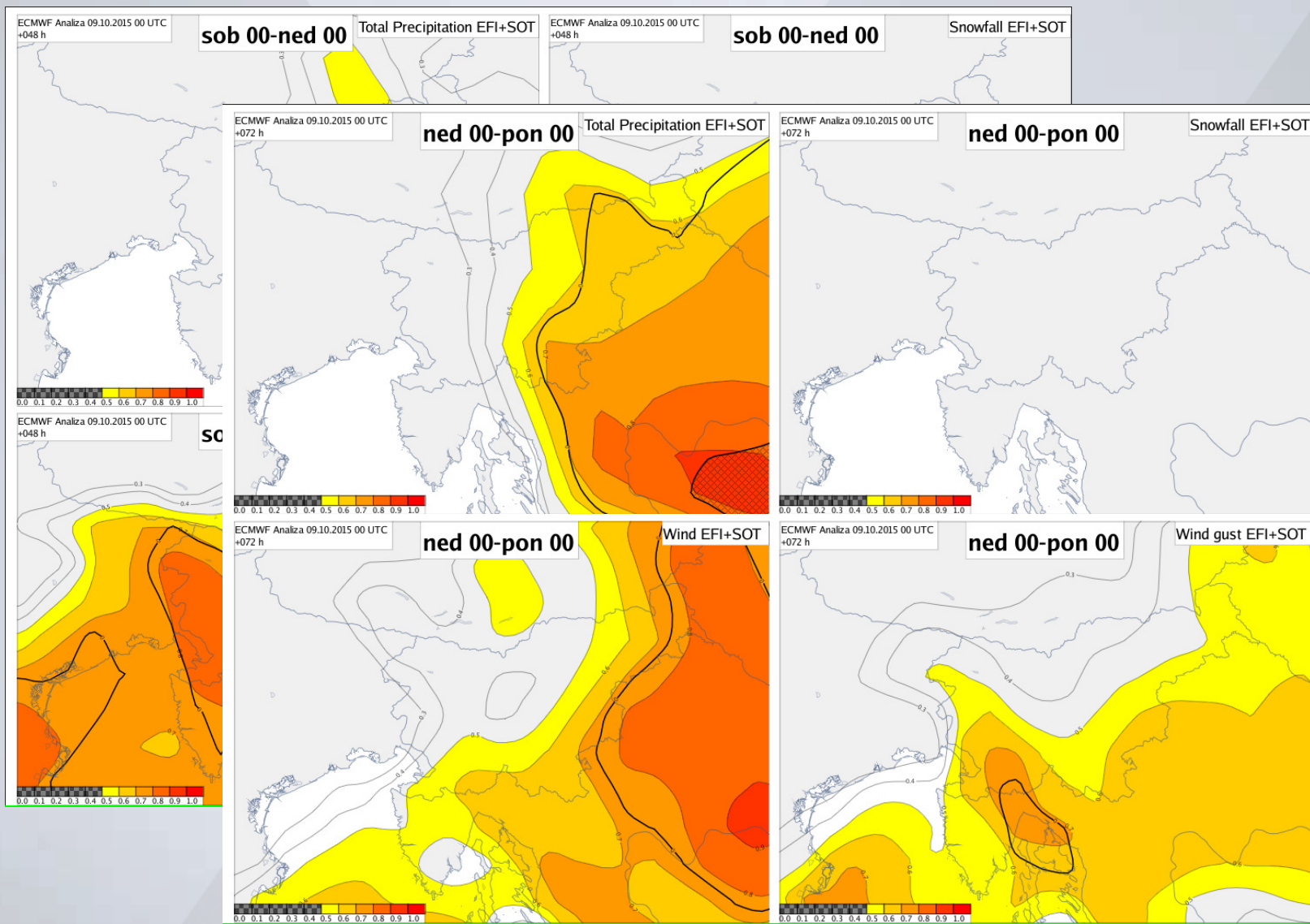




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EPS products

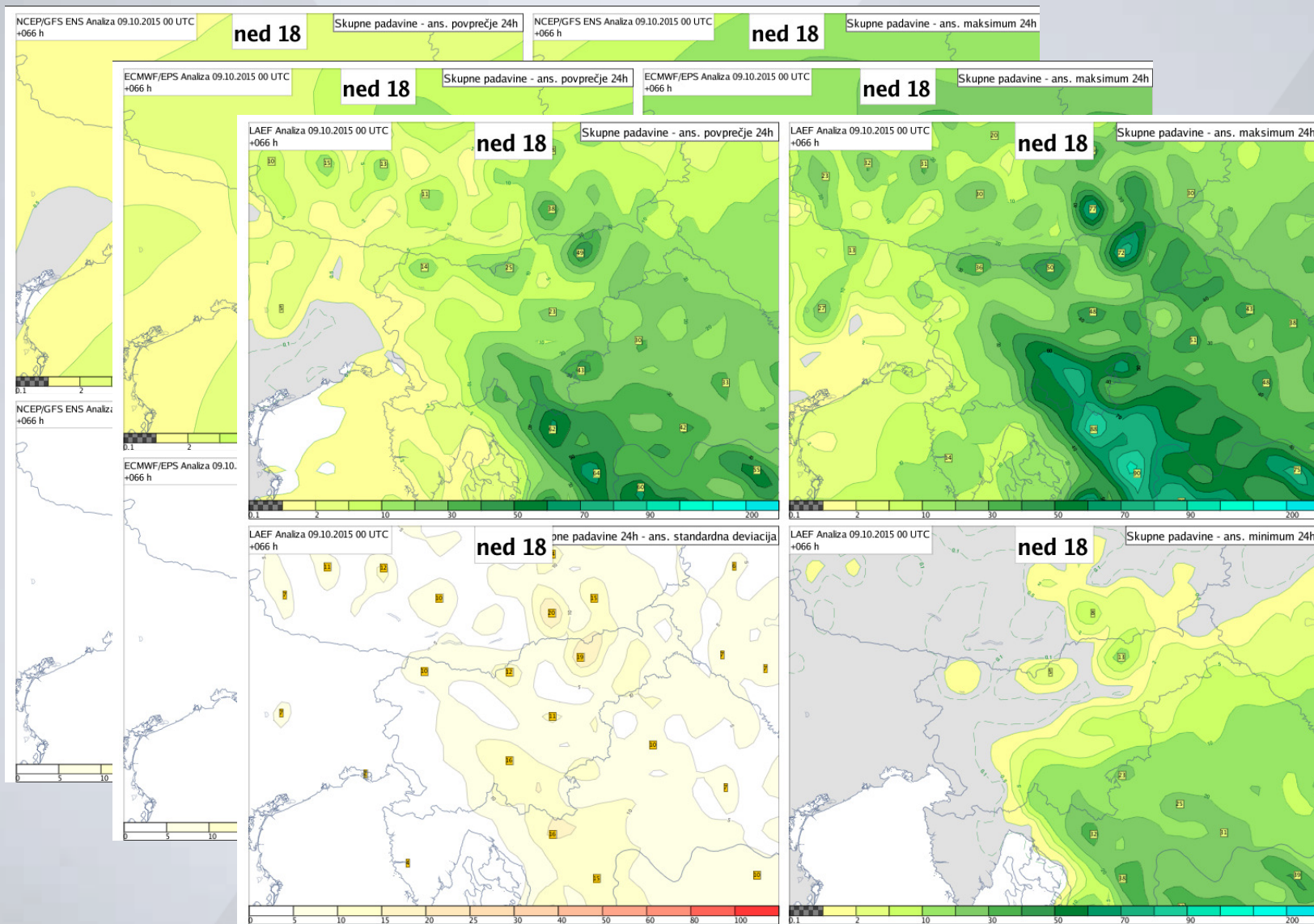




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EPS products

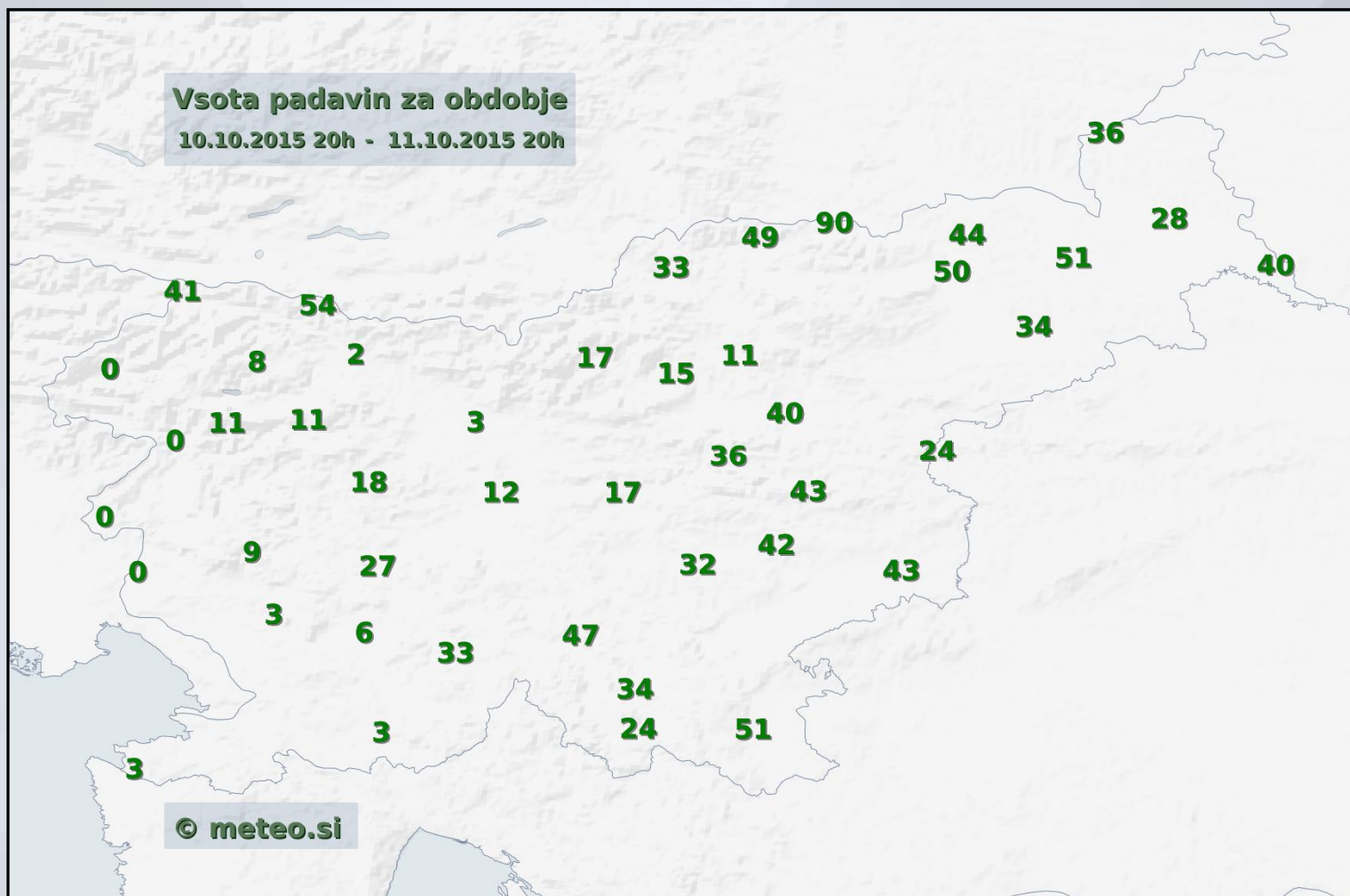




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Measured precipitation

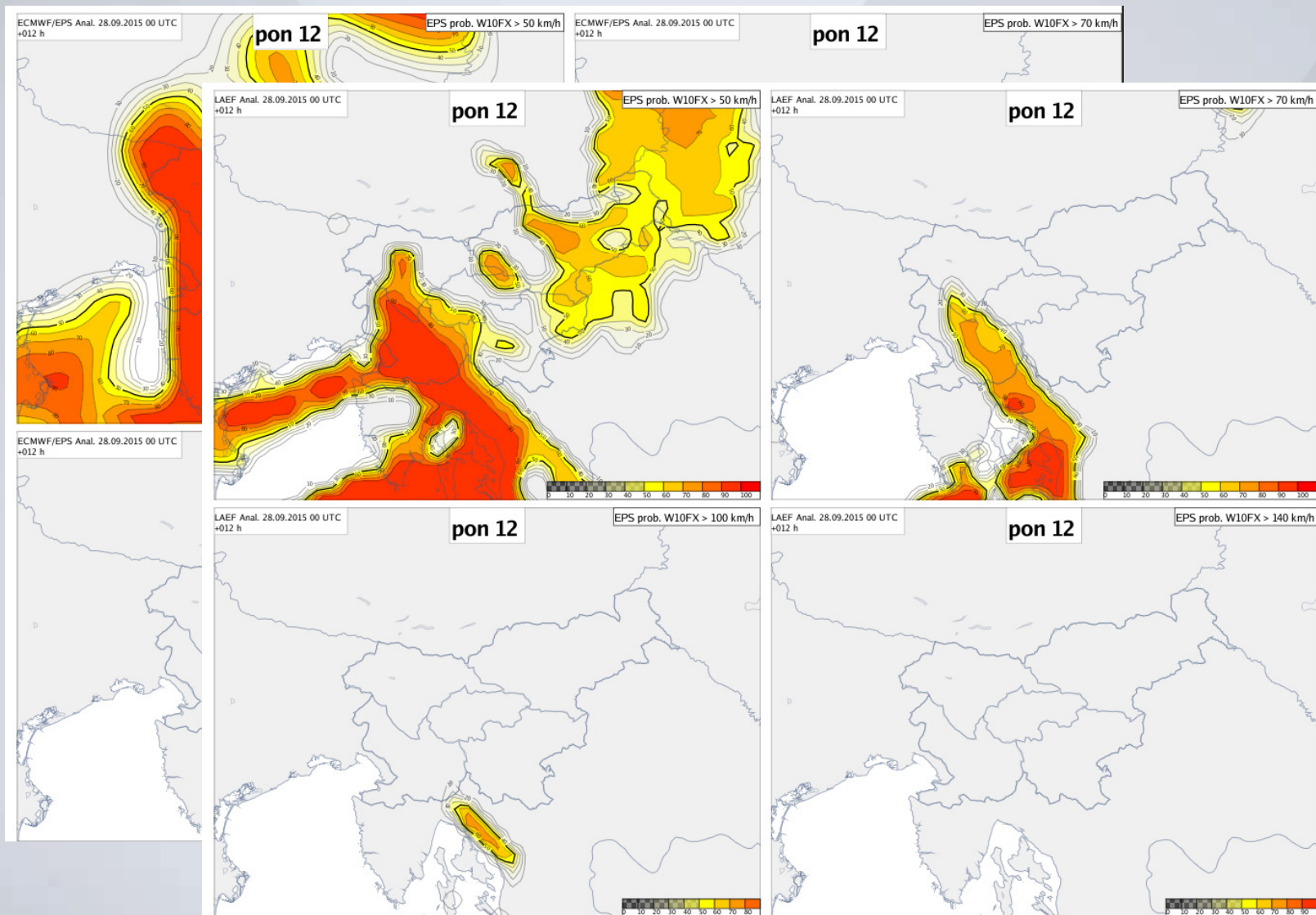




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EPS products

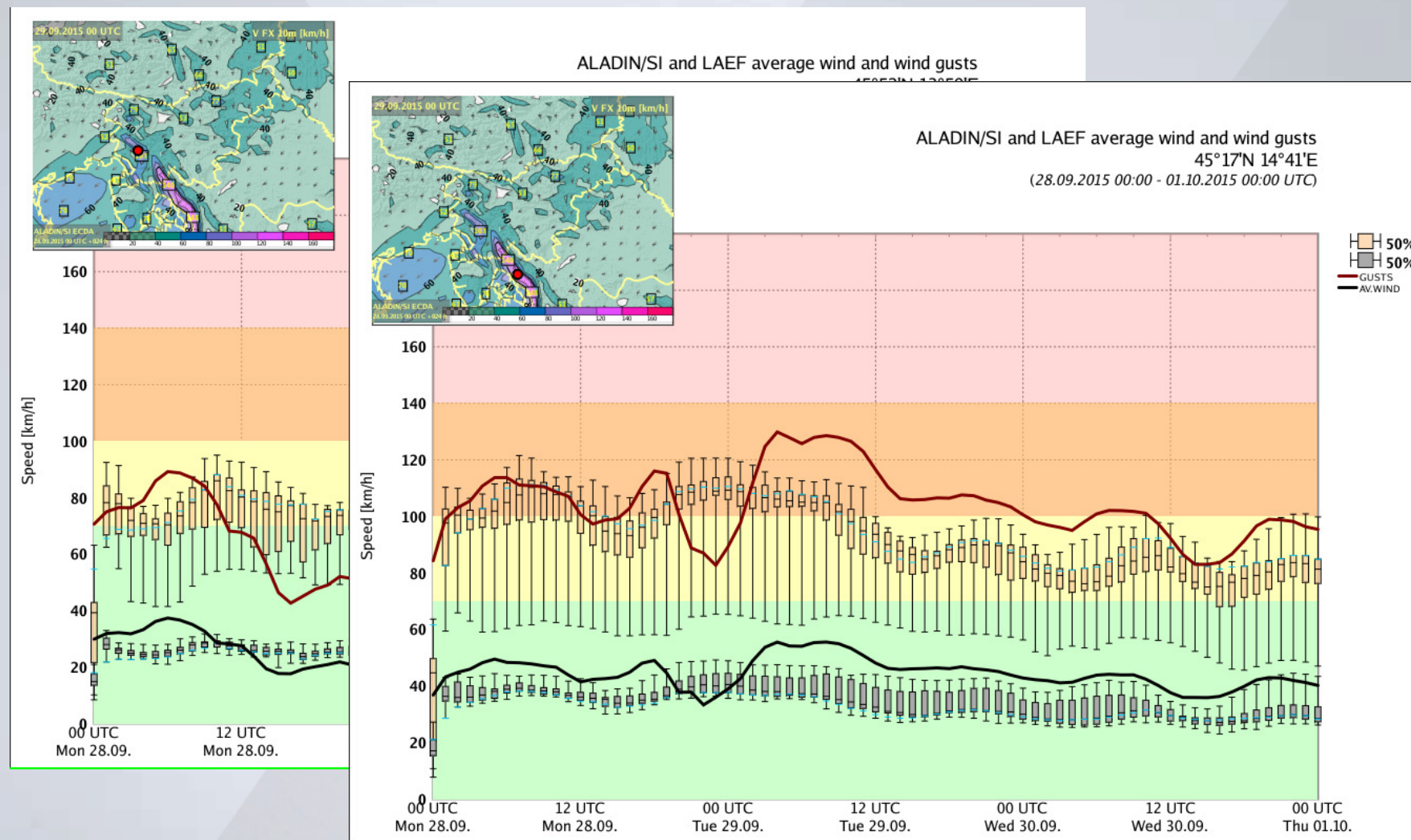




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EPS products



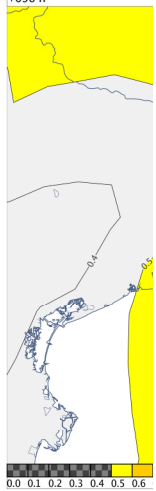


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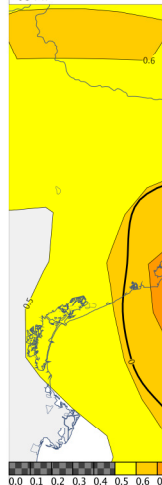
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14.-15.10.2015

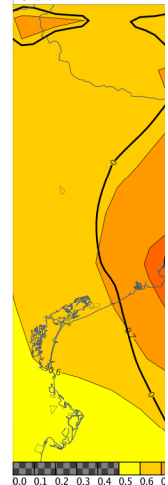
ECMWF Analiza 11.10.2015
+096 h



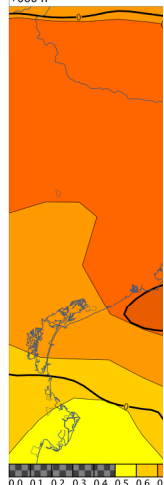
ECMWF Analiza 11.10.2015
+084 h



ECMWF Analiza 12.10.2015
+072 h



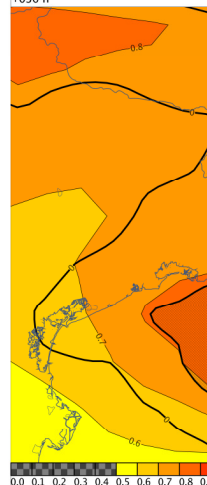
ECMWF Analiza 12.10.2015
+060 h



ECMWF Analiza 13.10.2015
+048 h

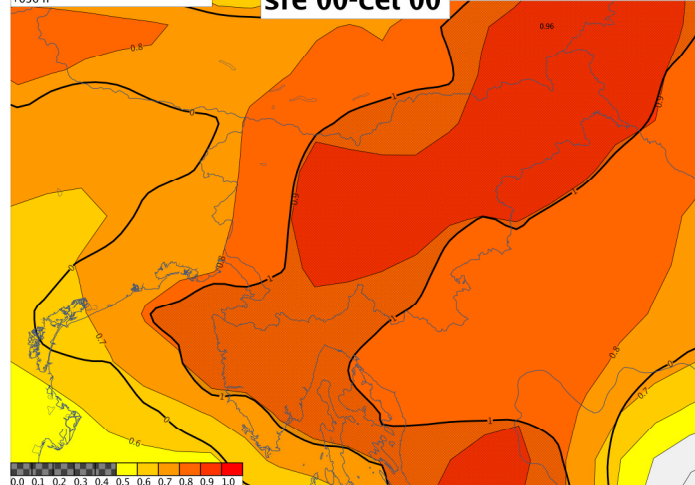


ECMWF Analiza 13.10.2015 12 UTC
+036 h

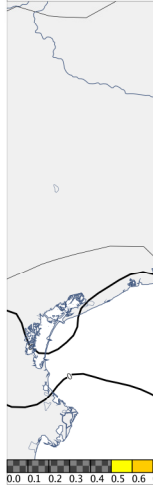


sre 00-čet 00

Total Precipitation EFI+SOT



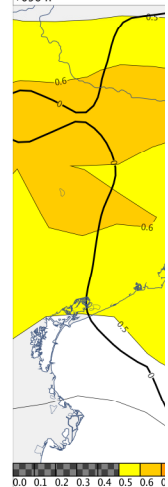
ECMWF Analiza 11.10.2015
+120 h



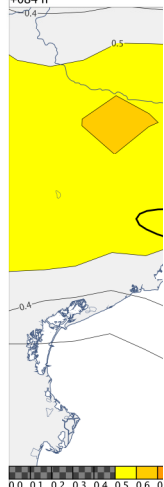
ECMWF Analiza 11.10.2015
+108 h



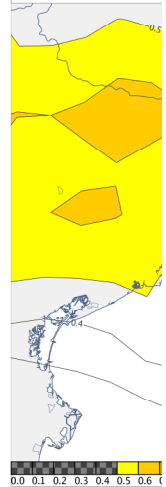
ECMWF Analiza 12.10.2015
+096 h



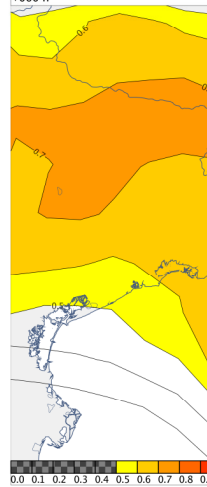
ECMWF Analiza 12.10.2015
+084 h



ECMWF Analiza 13.10.2015
+072 h

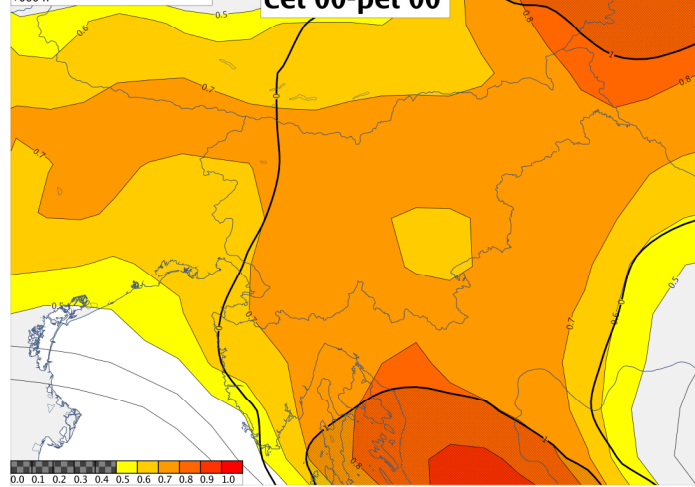


ECMWF Analiza 13.10.2015 12 UTC
+060 h



čet 00-pet 00

Total Precipitation EFI+SOT

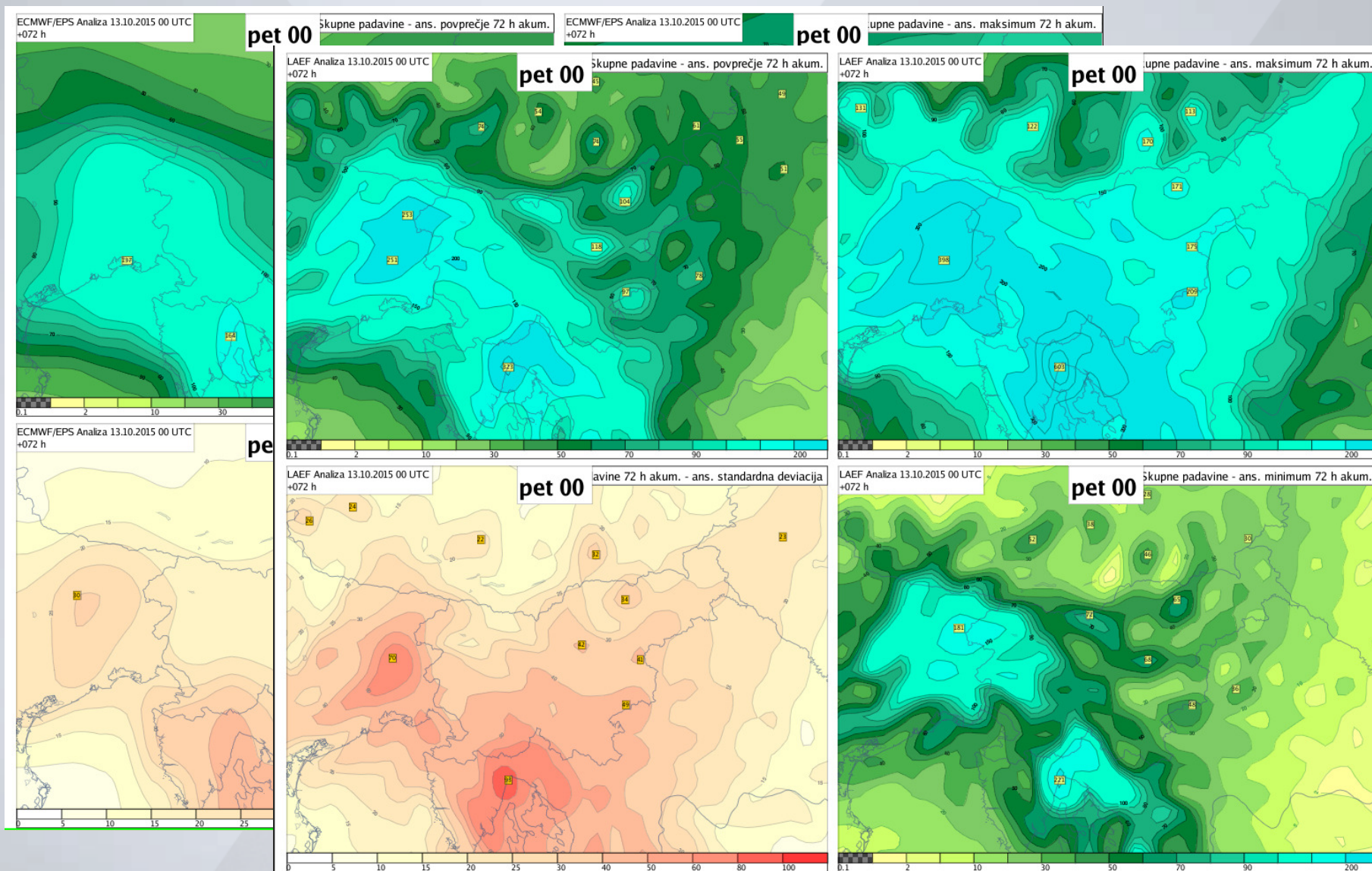




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13.-15.10.2015 72h accumulation





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PEPS

Analiza 14.10.2015 00 UTC

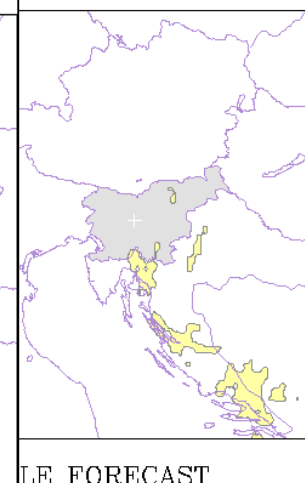
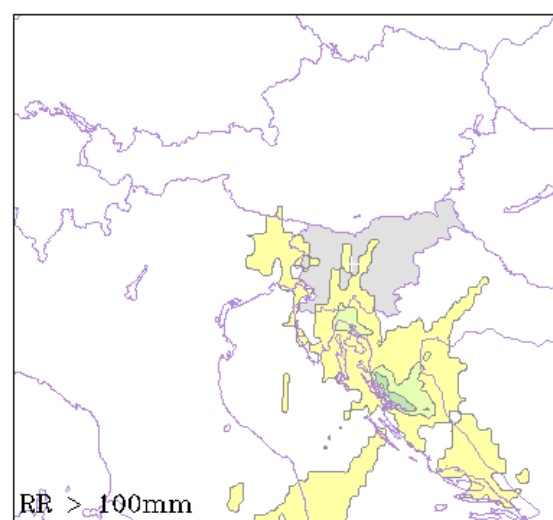
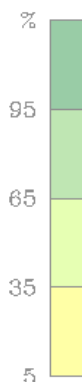
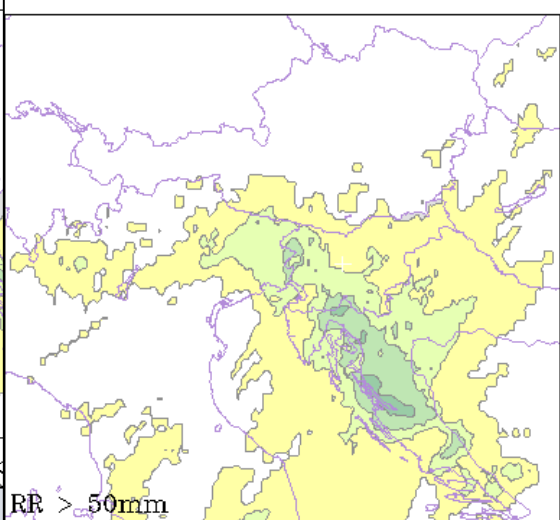
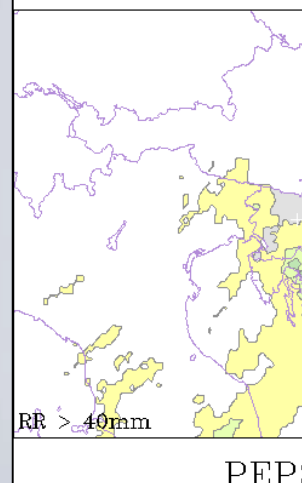
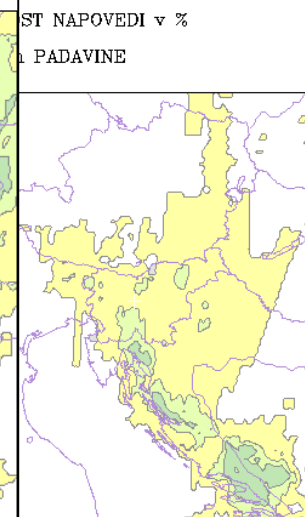
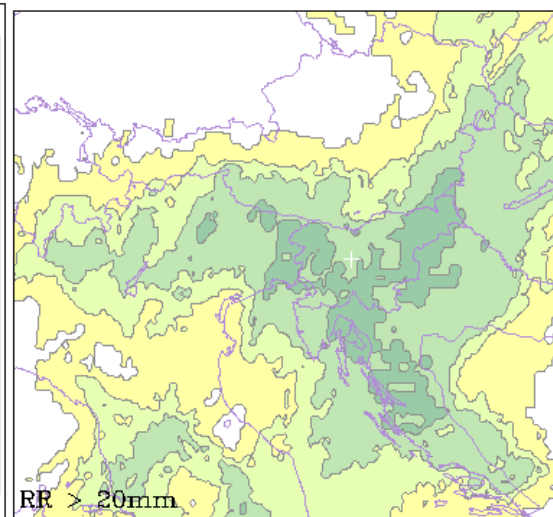
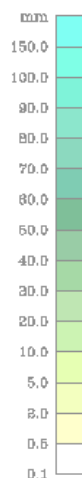
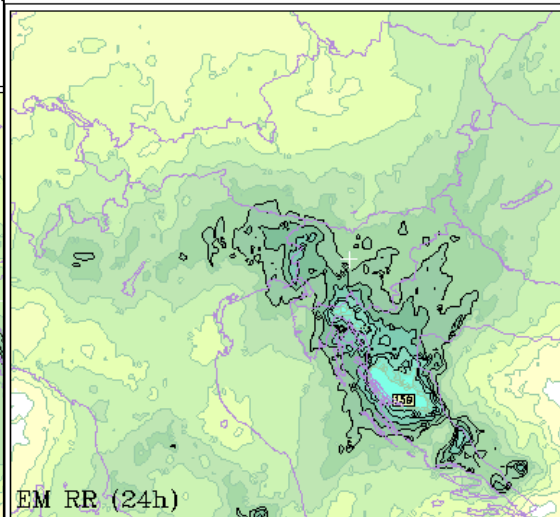
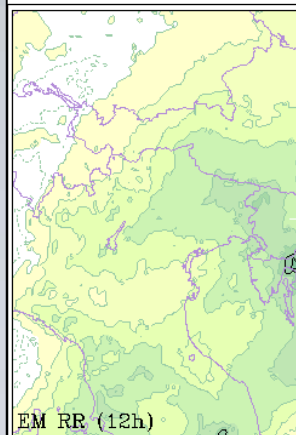
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VERJETNOST NAPOVEDI v %

+030h

24h PADAVINE

Analiza 14.10.2015 00
+018h



PEPS

PEPS

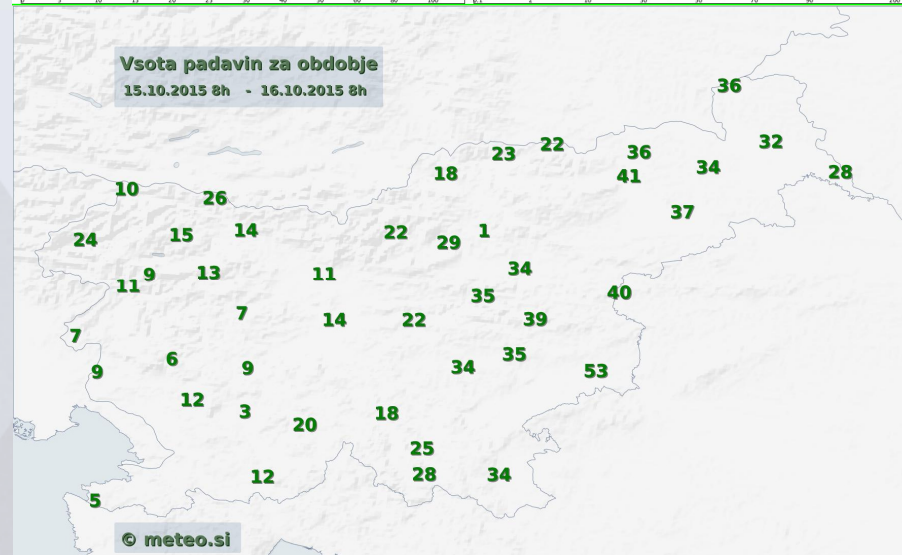
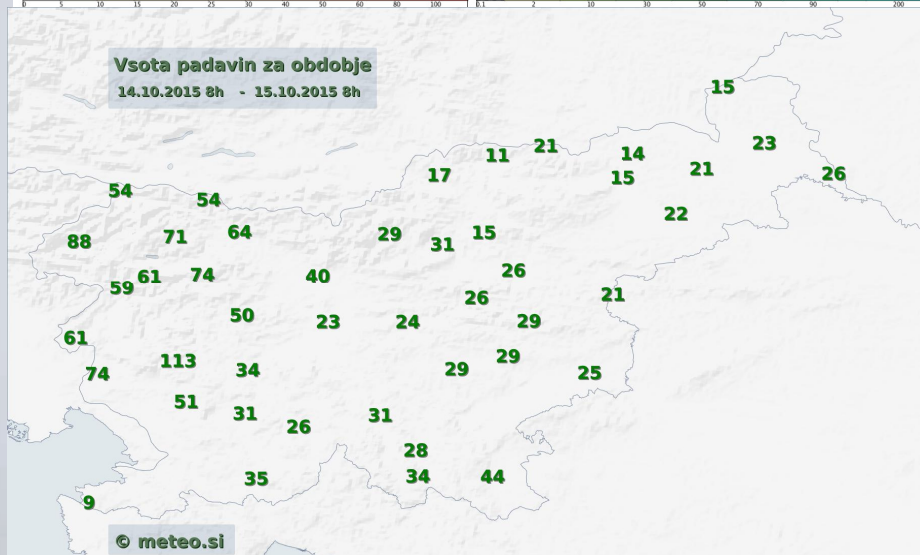
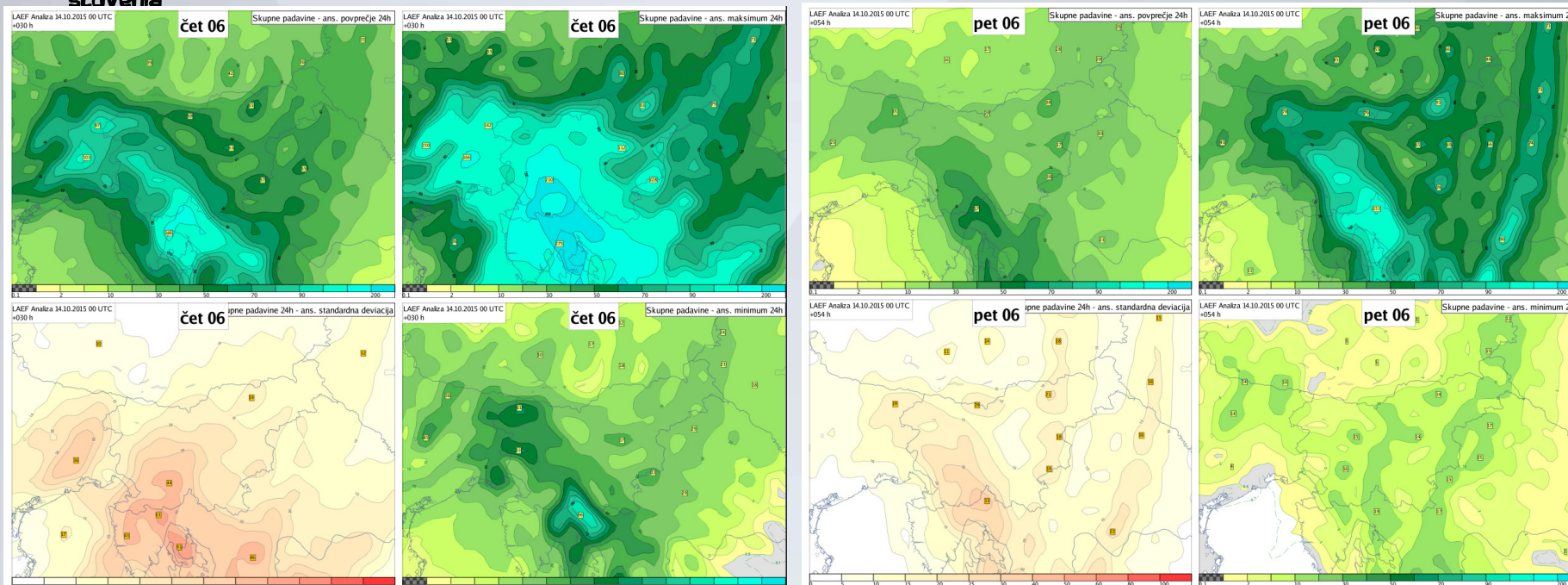
ENSEMBLE FORECAST



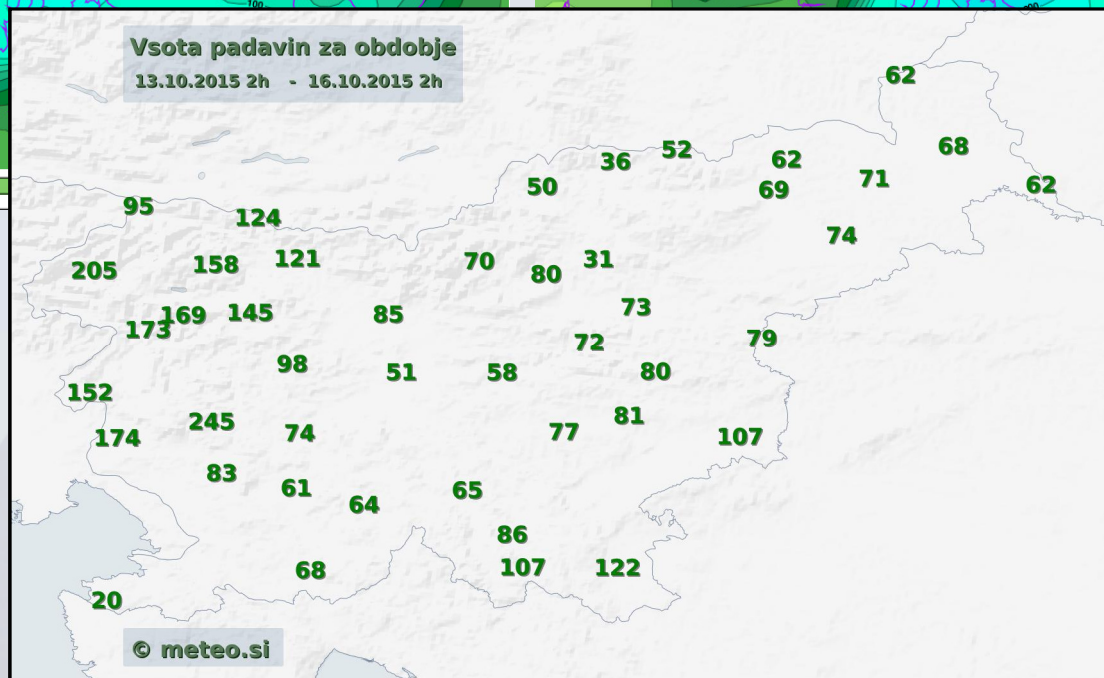
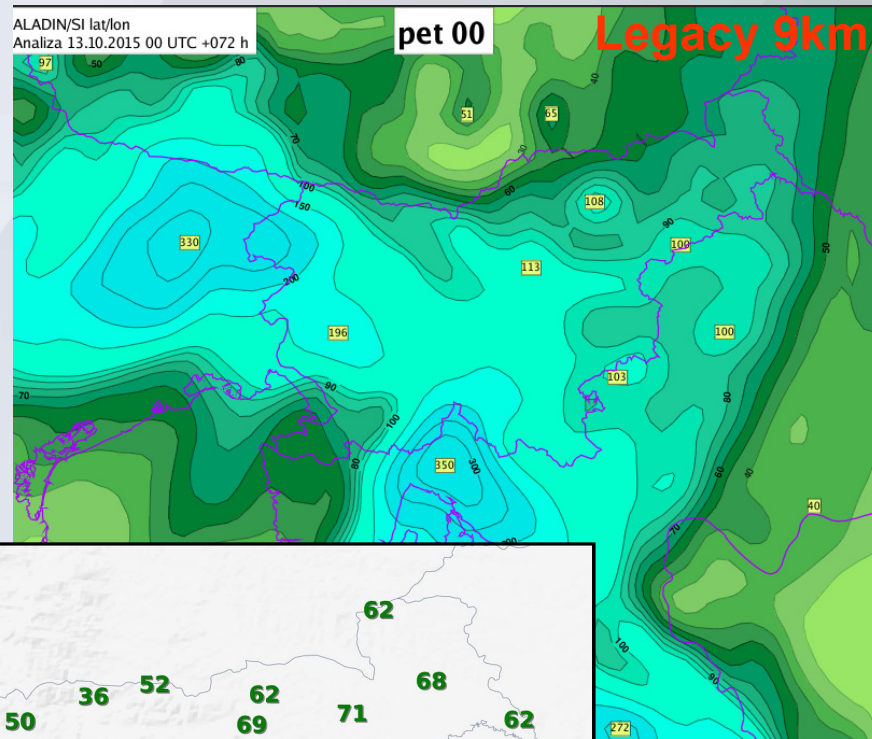
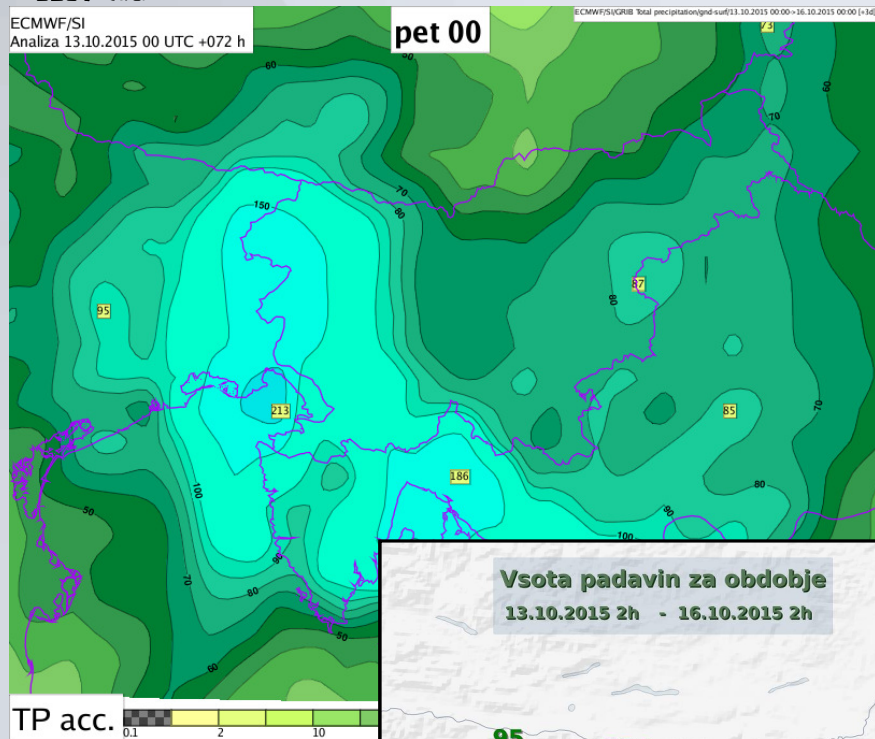
REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT AND SPATIAL
PLANNING

SLOVENIAN ENVIRONMENT AGENCY (ARSO)
NATIONAL METEOROLOGICAL SERVICE OF
SLOVENIA

13.-15.10.2015 case 24h accumulation



13.-15.10.2015 72h accumulation





**REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT AND SPATIAL
PLANNING**

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NATIONAL METEOROLOGICAL SERVICE OF
SLOVENIA**

Thank you!