

Numerički model za prognozu vremena

ALADIN

operativna verzija i razvoj

Martina Tudor i Stjepan Ivatek-Šahdan

Sažetak

- Operativna verzija modela ALADIN
- Pregled operativnih produkata
 - 2D polja (temperatura, relativna vlaga, vjetar, tlak, naoblaka, oborina, indeksi)
 - 2D polja (geopotencijal, vjetar, temperatura, vlaga, omega, vrtložnost, divergencija ...)
 - HRID, meteogrami, tablice ...
 - Usporedba s mjerenjima
- Istraživačke teme

Operativna verzija

- Početni i rubni uvjeti – ARPEGE , DFI
- Hidrostatski model, SLHD, prognostička naoblaka, oborina i TKE
- 37 nivoa slijede teren
- 2 runa dnevno (00 i 12 UTC) do 72 sata
- Izlazne datoteke 1 h, arhiva 3 h
- http://mjesec.gric.dhz.hr/~aladinhr/alaroHR_00/

Operativni produkti

- Datoteke u “aladin” formatu (arhiva)
- GRIB datoteke (korisnici)
- ASCII datoteke
- Slike (2D, 3D polja, zoom)
- Posebni produkti na zahtjev korisnika
- 8km rezolucija
- 2km rezolucija - vjetar

Produkti modela do 72 sata ALARO/HR88 start 00 UTC

[ALARO do 72h 00 UTC](#)

[ALARO do 72h 12 UTC](#)

[ALARO do 72h jučerašnji 00 UTC](#)

[ALARO do 72h jučerašnji 12 UTC](#)

[ALARO do 72h prekjučerašnji 00 UTC](#)

[ALARO do 72h prekjučerašnji 12 UTC](#)

- Usporedba s podacima sa [hrvatskih](#) i [europskih](#) sinoptičkih postaja.
- Usporedba s podacima sa hrvatskih sinoptičkih postaja za [temperaturu](#), [tlak](#), [brzinu](#) i [smjer vjetra](#) za 5 dana te [ukupnu oborinu](#) i [snijeg](#) za prethodnih 9 dana.
- Usporedba s podacima sa hrvatskih sinoptičkih postaja za [temperaturu](#), [tlak](#) i [vjetar](#) te [oborinu](#).
- Usporedba s podacima sa europskih sinoptičkih postaja za [temperaturu](#), [tlak](#) i [vjetar](#) te [oborinu](#).
- Usporedba s podacima sa hrvatskih automatskih postaja za [temperaturu](#), [relativnu vlažnu](#) i [tlak](#) i [vjetar](#).
- Usporedba s podacima [24 satne oborine iz sinop podataka](#) za prethodnih 9 dana.

HRID vertikalni presjeci ALARO/HR start 00 UTC

Kopno

More

Susjedi

HRID meteogrami ALARO/HR start 00 UTC

Kopno

More

Susjedi

Do_1.5km

Vertikalni presjeci ALARO/HR start 00 UTC

M. Lošinj - Senj - Zagreb

- Temp. i hor. vjetar
- TKE i snijeg
- Vertikalna brzina
- Rel. vlaž. i pot. temp.

N. Mesto - Pleso - Osijek - Dalj

- Temp. i hor. vjetar
- TKE i snijeg
- Vertikalna brzina
- Rel. vlaž. i pot. temp.

Komiža - Split - Sl. Brod - B. Manastir

- Temp. i hor. vjetar
- TKE i snijeg
- Vertikalna brzina
- Rel. vlaž. i pot. temp.

Palagruža - Makarska - Osijek

- Temp. i hor. vjetar
- TKE i snijeg
- Vertikalna brzina
- Rel. vlaž. i pot. temp.

Gargano - Split

- Temp. i hor. vjetar
- TKE i snijeg
- Vertikalna brzina
- Rel. vlaž. i pot. temp.

Vertikalni presjeci HRDA start 00 UTC

M. Lošinj - Senj - Zagreb

- Pot. temp. i hor. vjetar
- Vertikalna brzina

N. Mesto - Pleso - Osijek - Dalj

- Pot. temp. i hor. vjetar
- Vertikalna brzina

Komiža - Split - Sl. Brod - B. Manastir

- Pot. temp. i hor. vjetar
- Vertikalna brzina

Palagruža - Makarska - Osijek

- Pot. temp. i hor. vjetar
- Vertikalna brzina

Gargano - Split

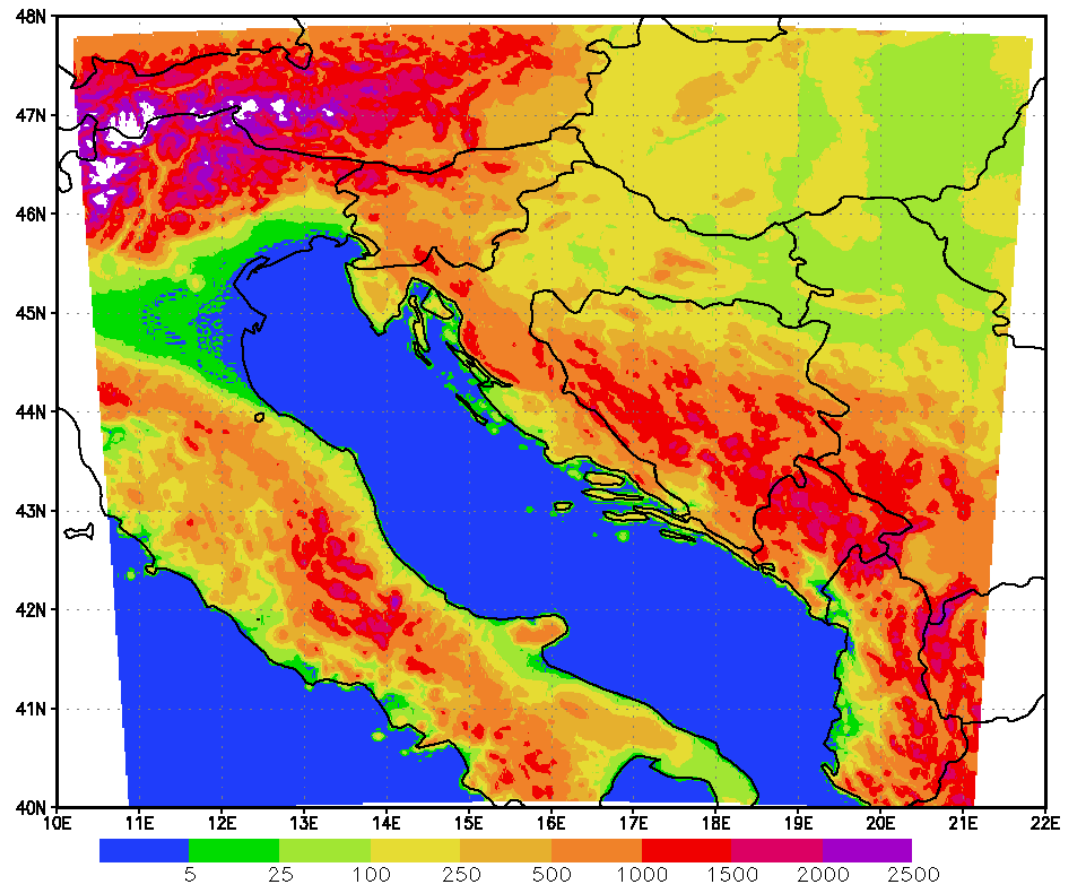
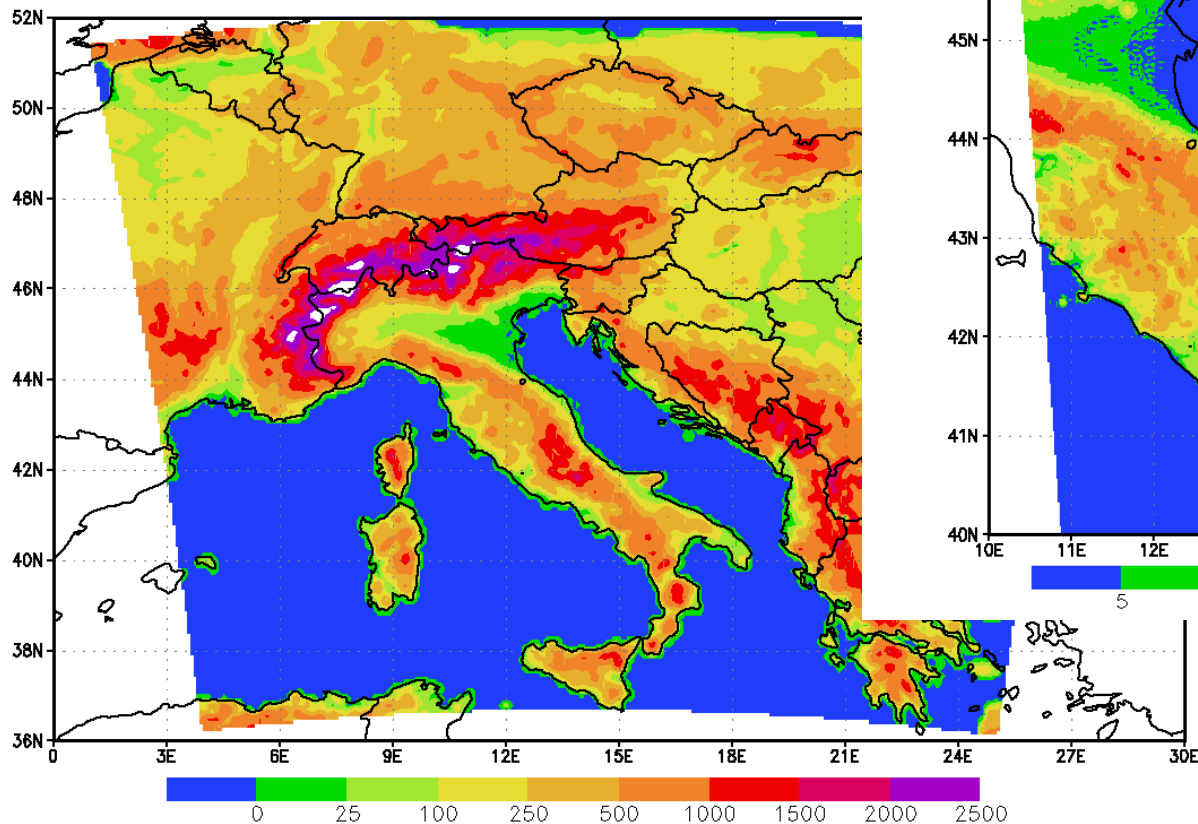
- Pot. temp. i hor. vjetar
- Vertikalna brzina

Meteorološka polja

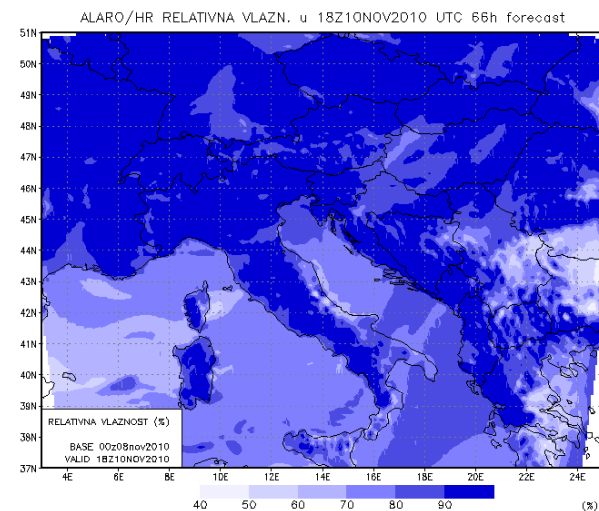
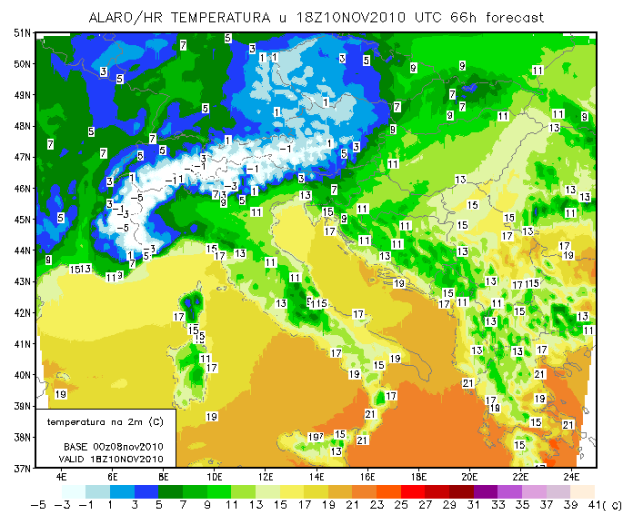
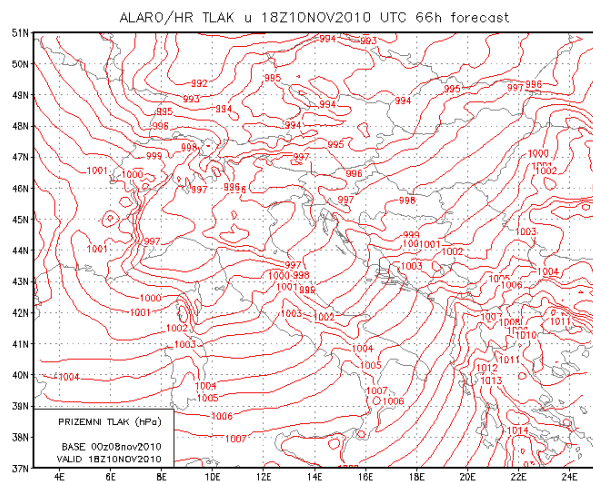
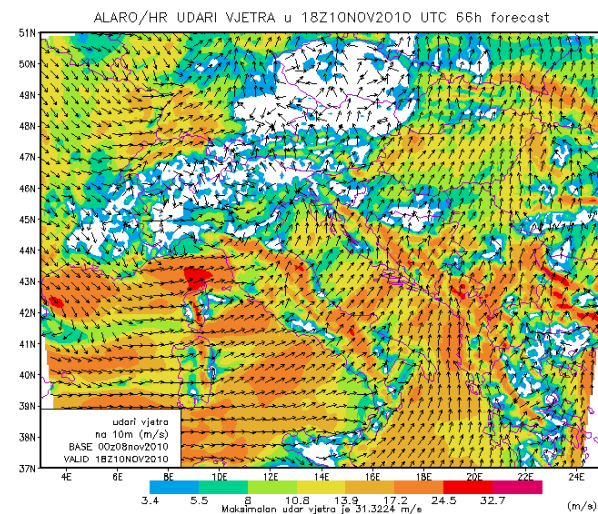
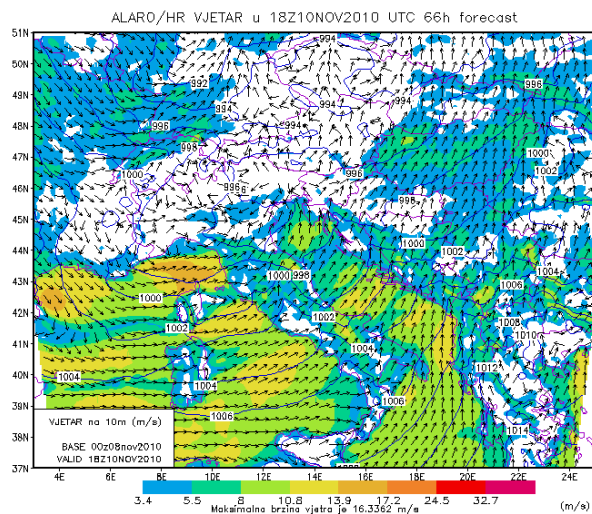
Prizemne karte

Operativne domene

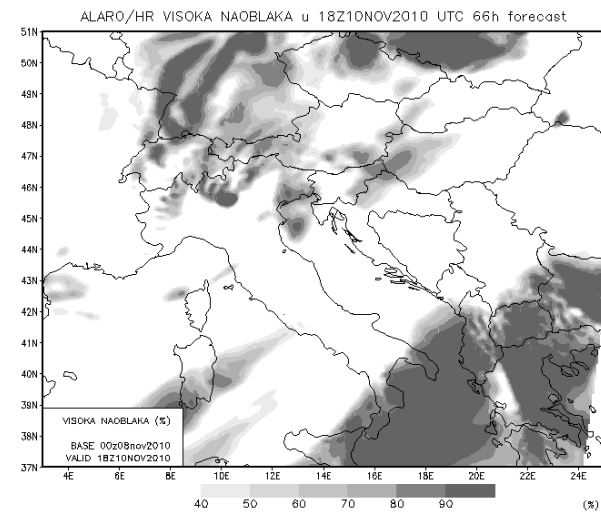
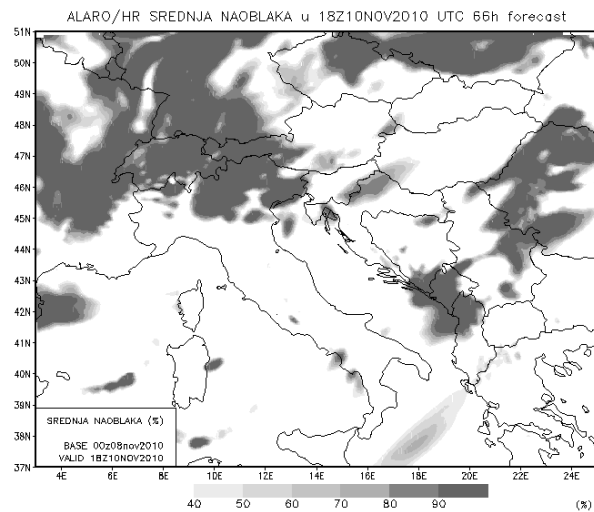
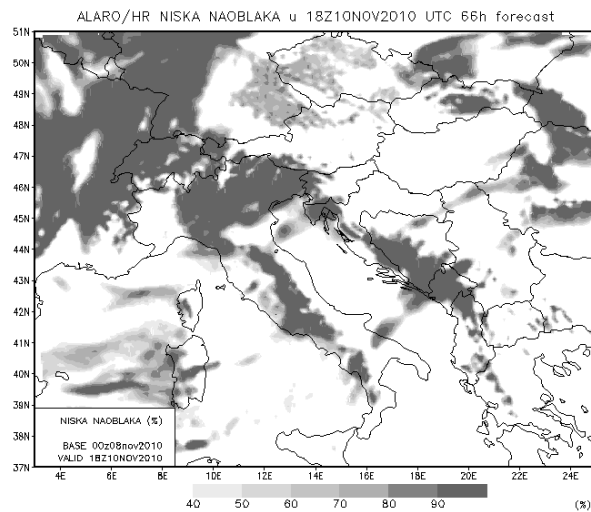
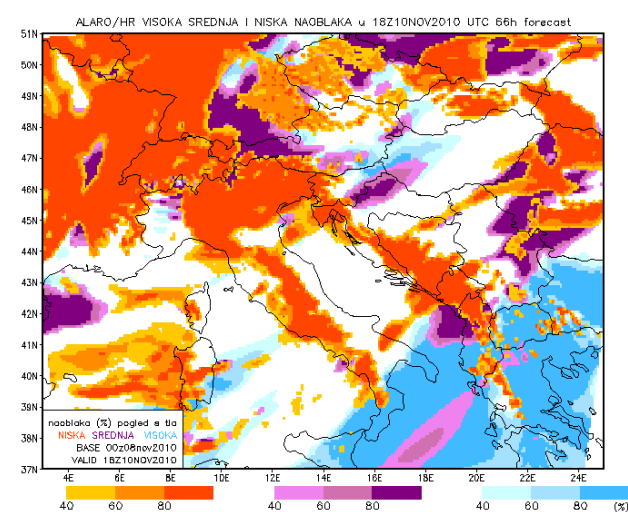
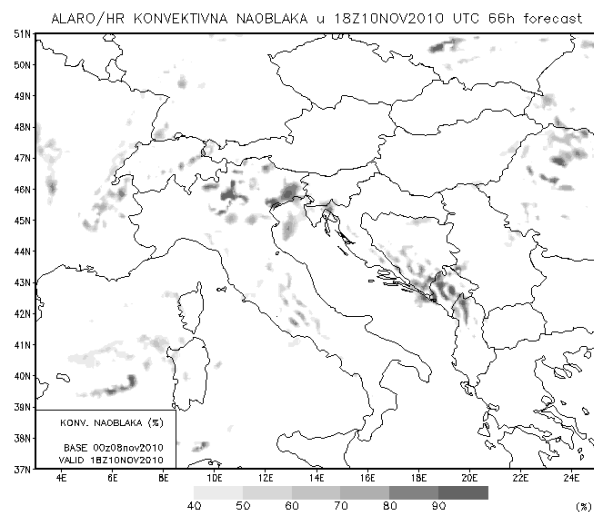
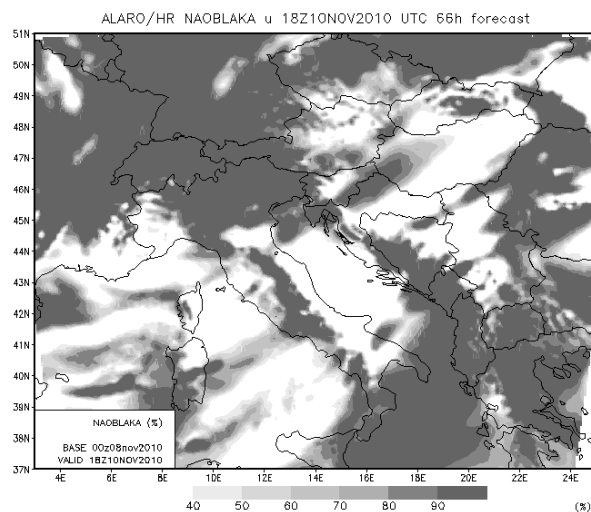
- 8 i 2 km horizontalne rezolucije



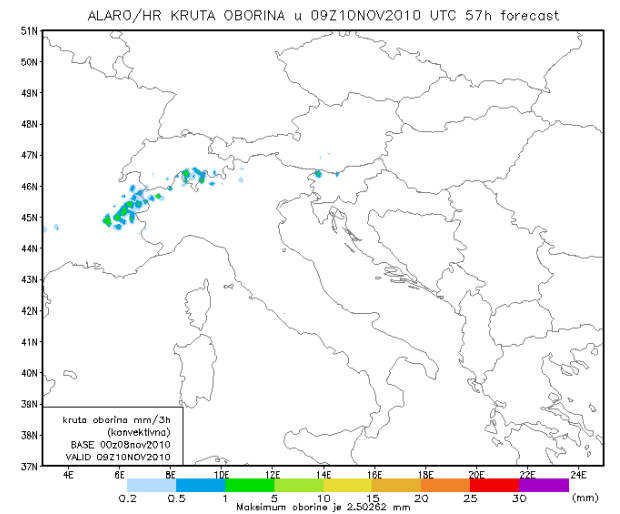
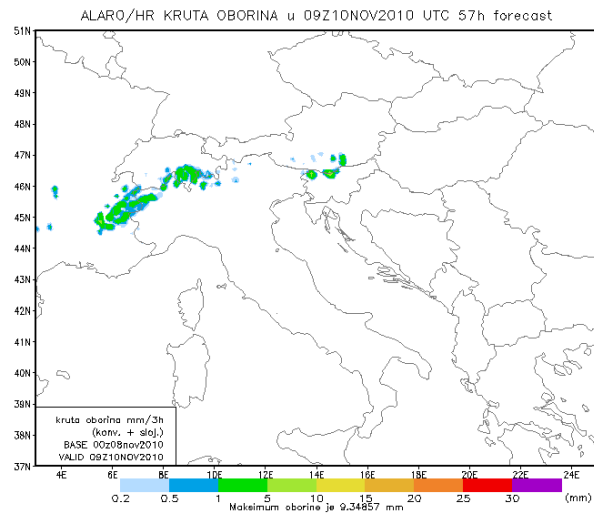
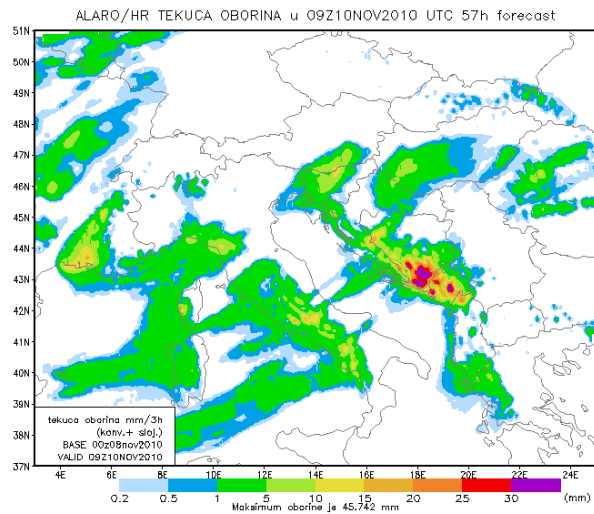
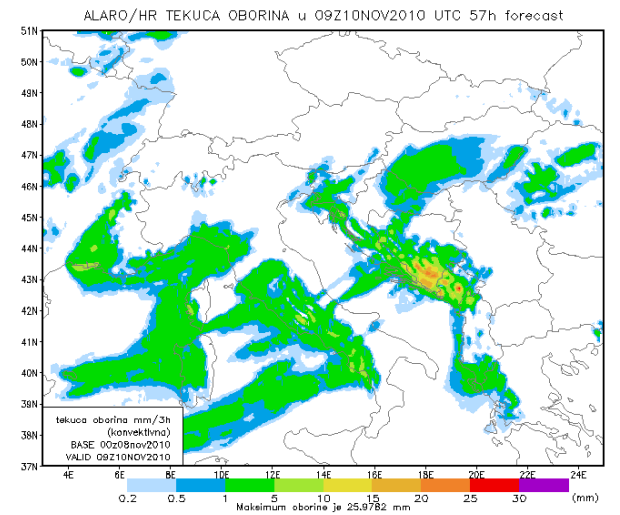
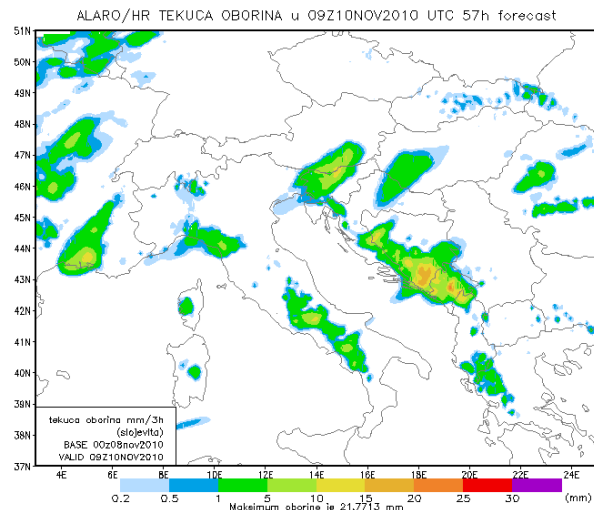
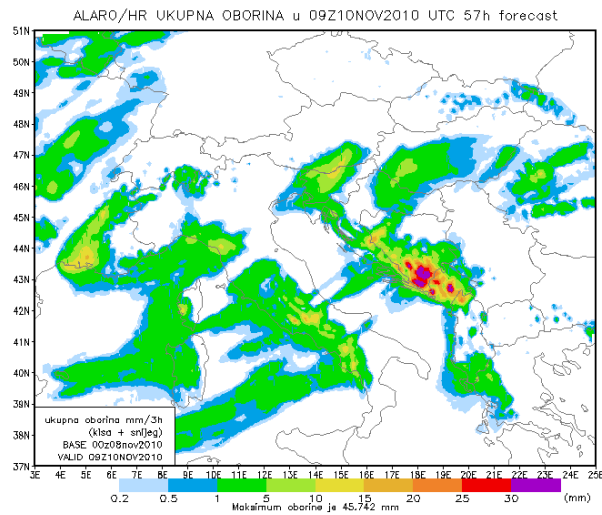
Vjetar, tlak, temperatura, vlaga



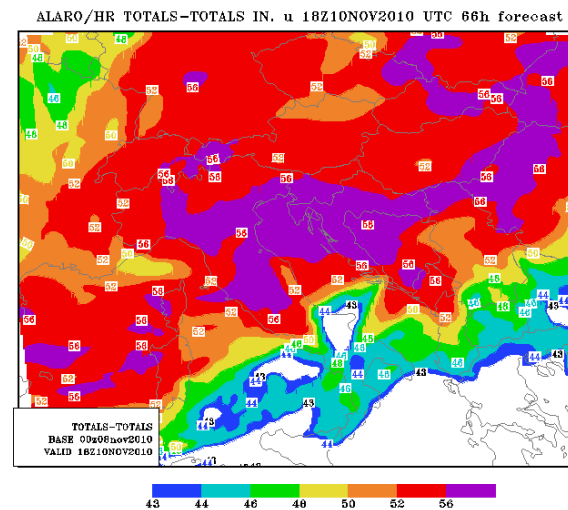
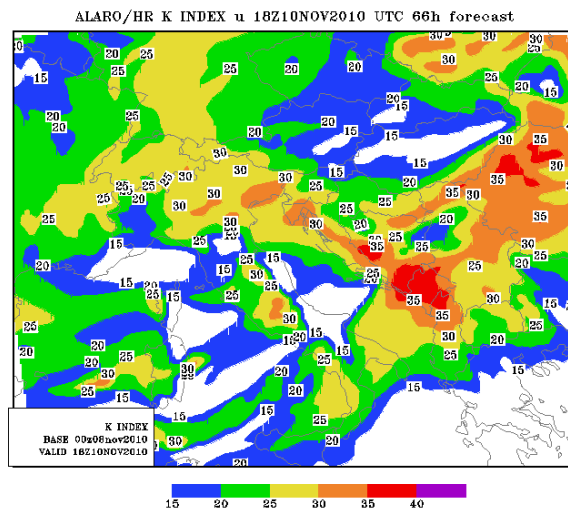
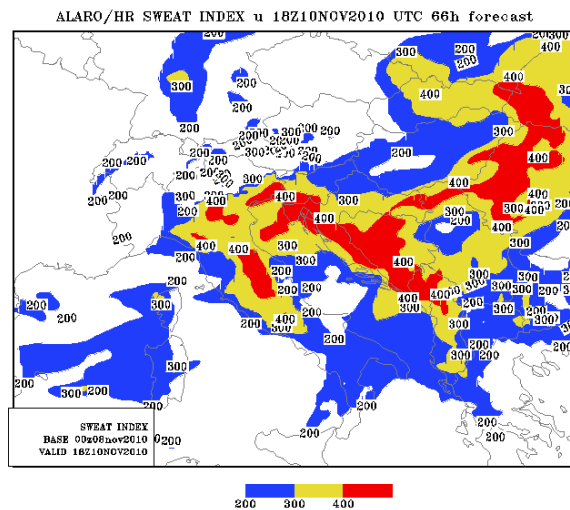
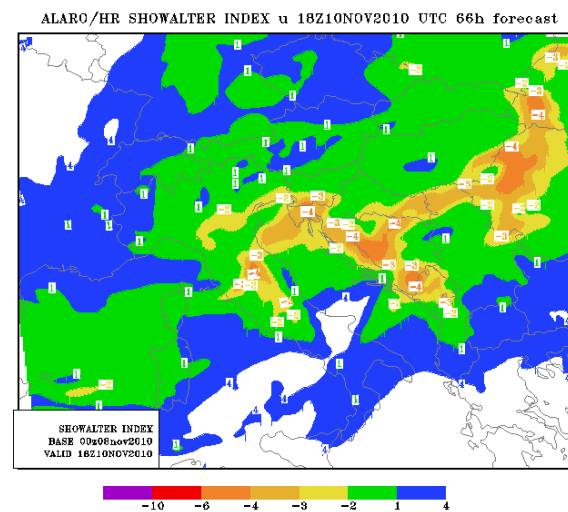
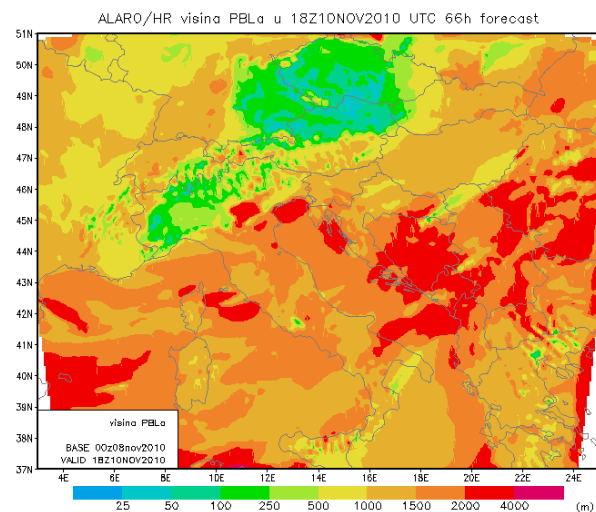
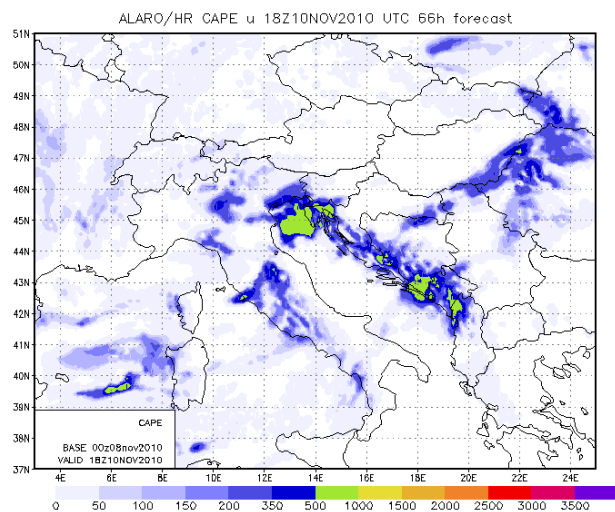
Naoblaka



Oborina

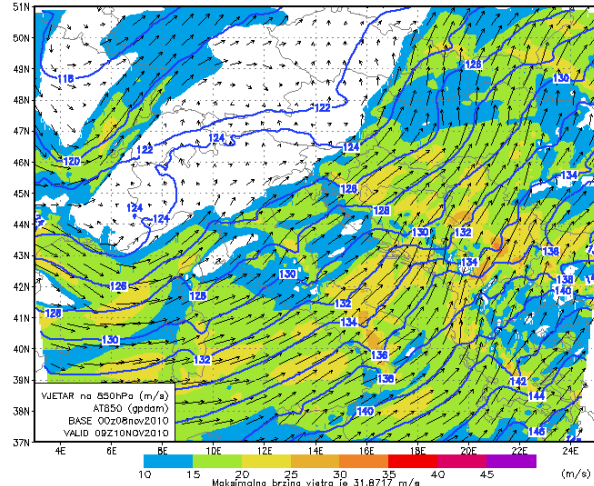


Indeksi

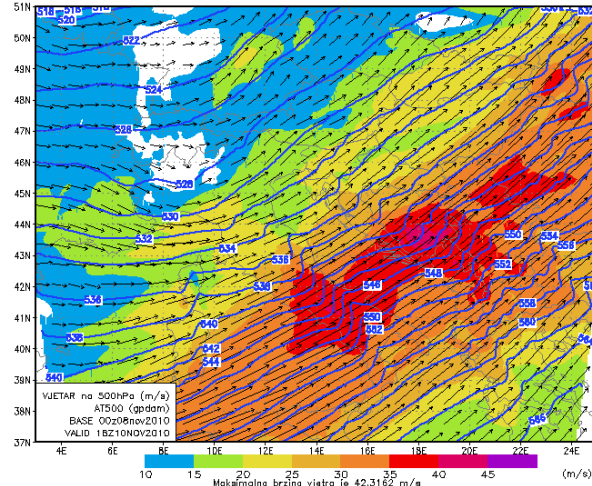


3D geop. vjetar, vlaga, temp.

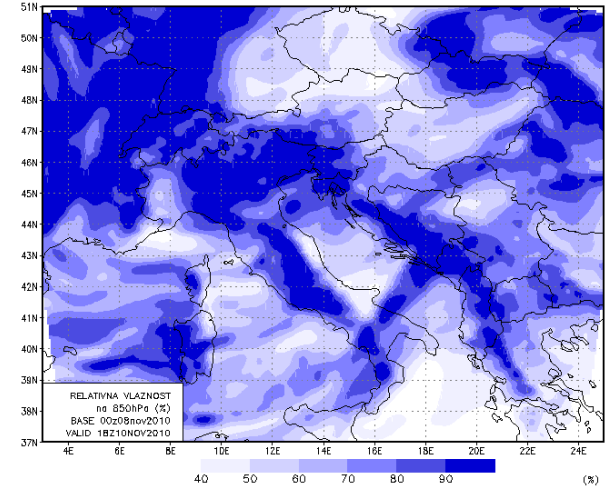
ALARO/HR VJETAR + Z na 850hPa u 09Z10NOV2010 UTC 57h forecast



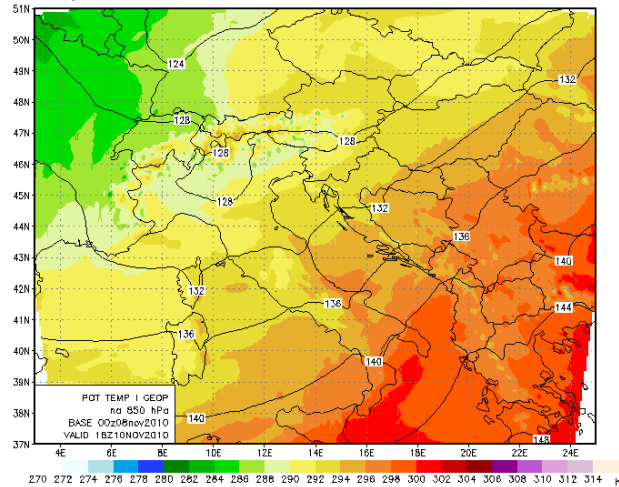
ALARO/HR VJETAR + Z na 500hPa u 18Z10NOV2010 UTC 66h forecast



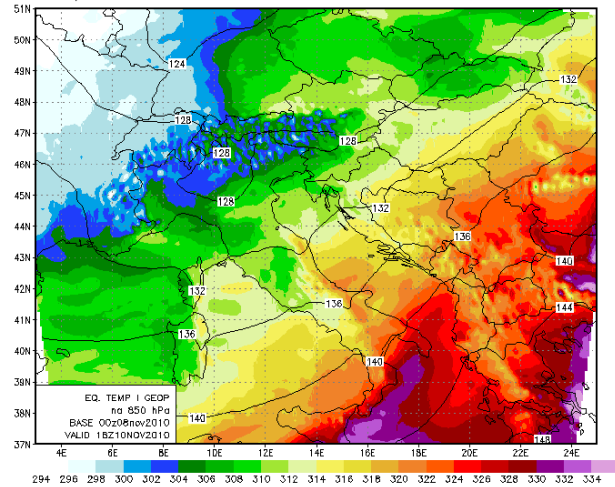
ALARO/HR REL. VLAZN. na 850hPa u 18Z10NOV2010 UTC 66h forecast



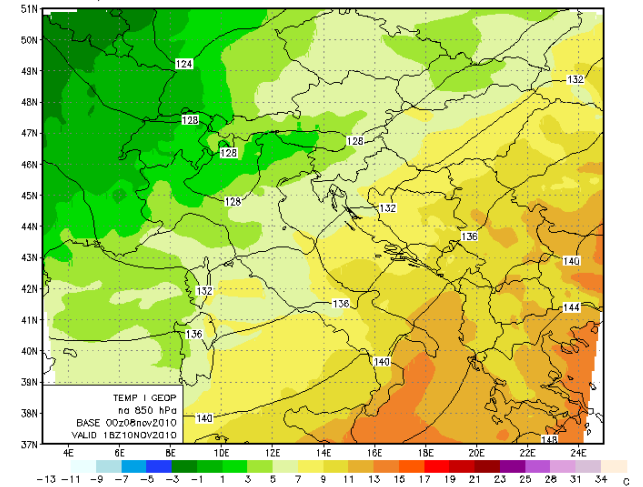
ALARO/HR POT TEMP I GEOP na 850hPa u 18Z10NOV2010 UTC 66h forecast



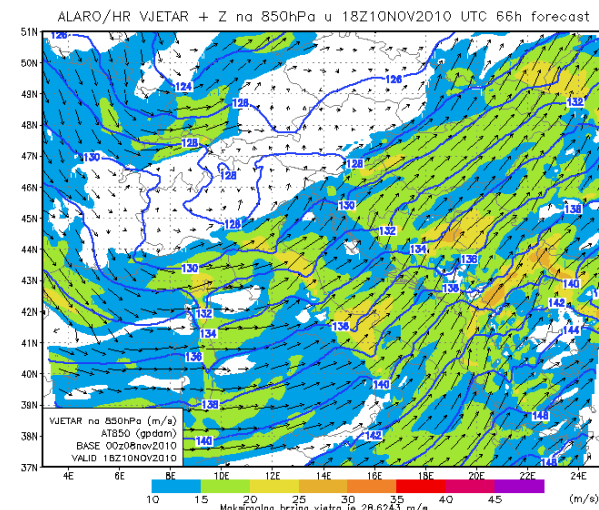
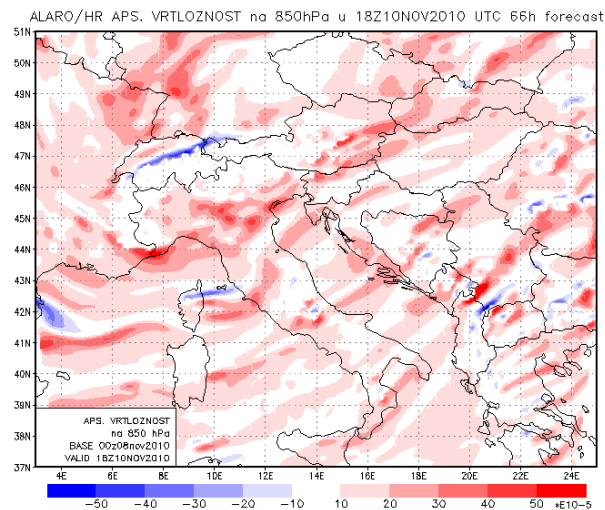
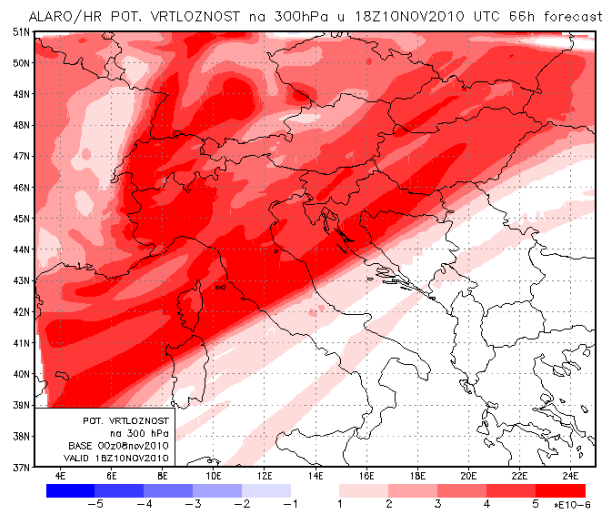
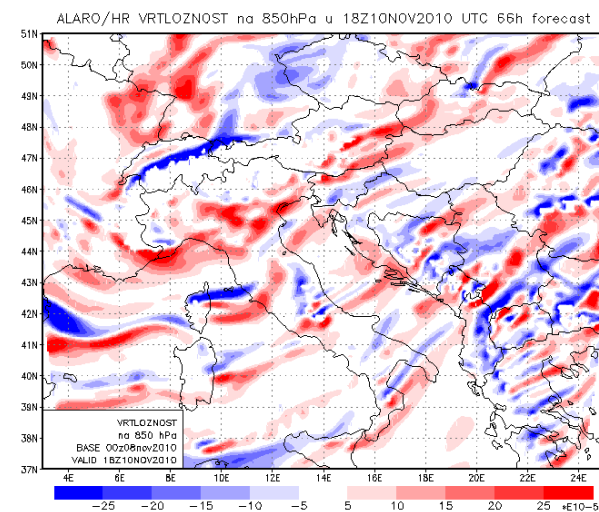
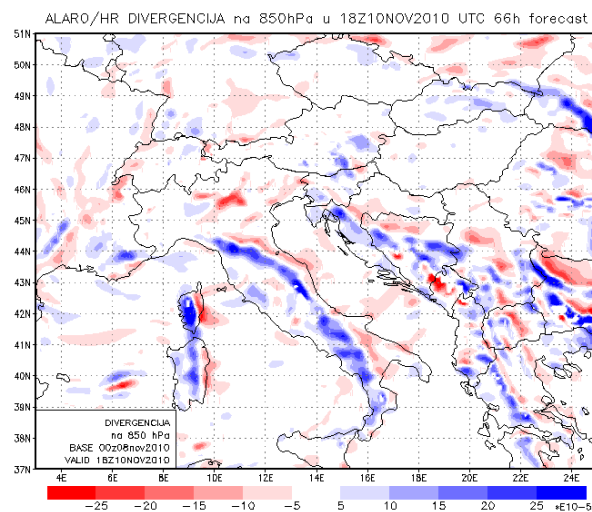
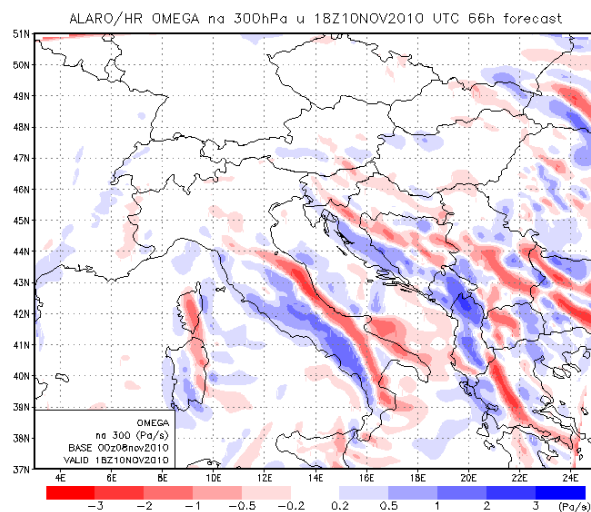
ALARO/HR EQ. TEMP I GEOP na 850hPa u 18Z10NOV2010 UTC 66h forecast



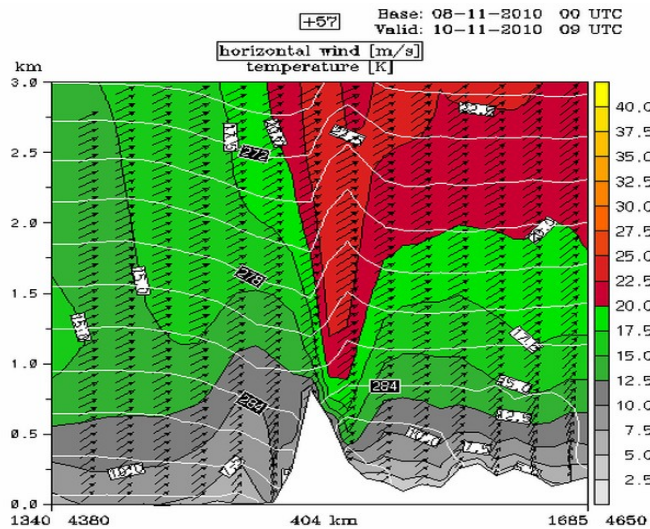
ALARO/HR TEMP I GEOP na 850hPa u 18Z10NOV2010 UTC 66h forecast



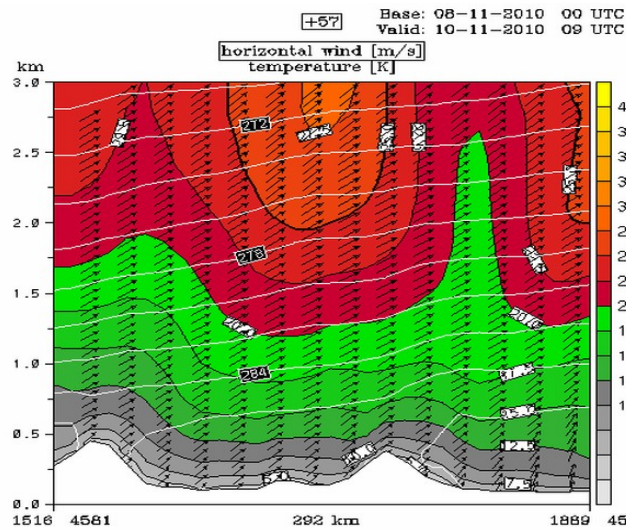
3D omega, divergencija, vrtložnost



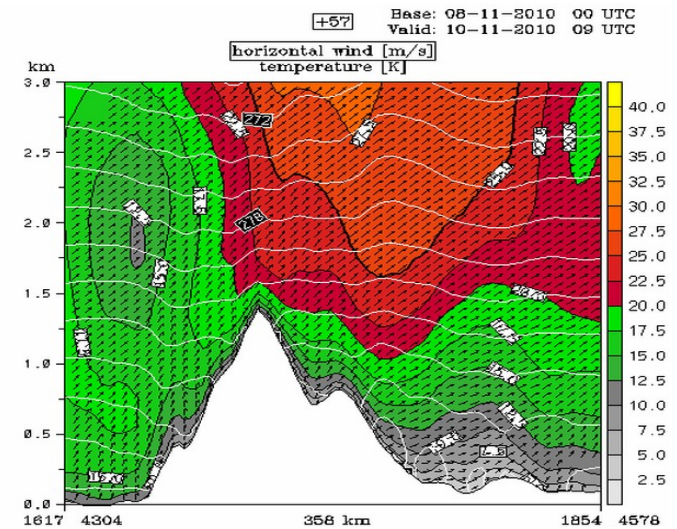
Vertikalni presjeci



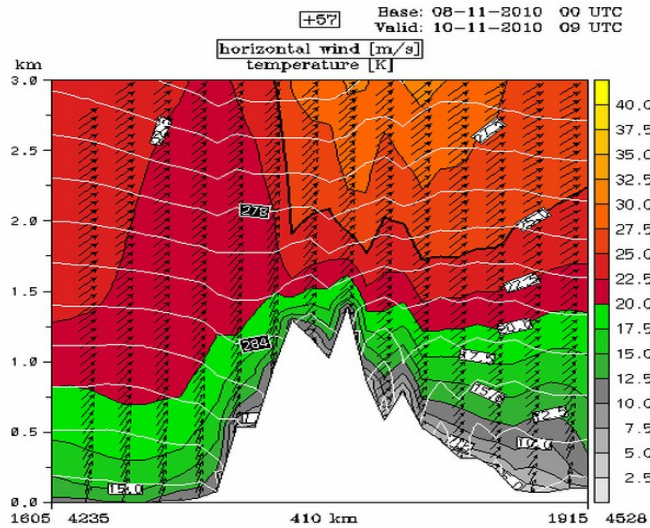
M. Lošinj - Senj - Zagreb



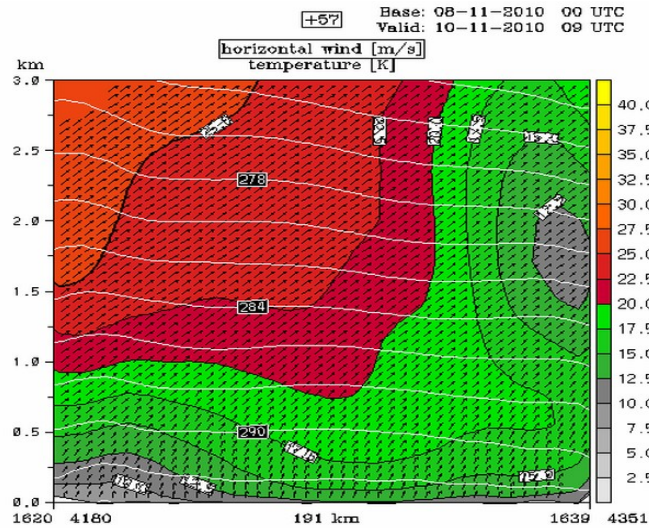
N. Mesto - Pleso - Osijek - Dalj



Komiža - Split - Sl. Brod

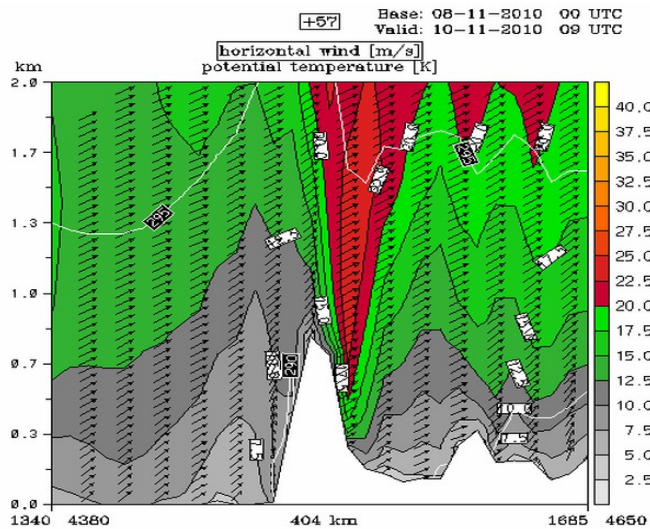


Palagruža - Makarska - Osijek

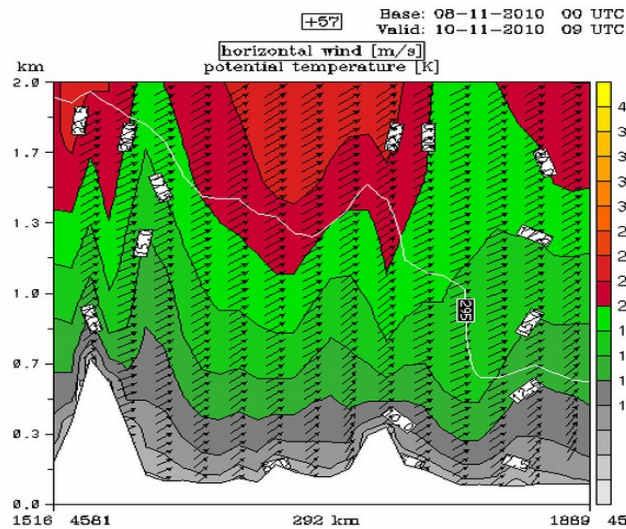


Gargano - Split

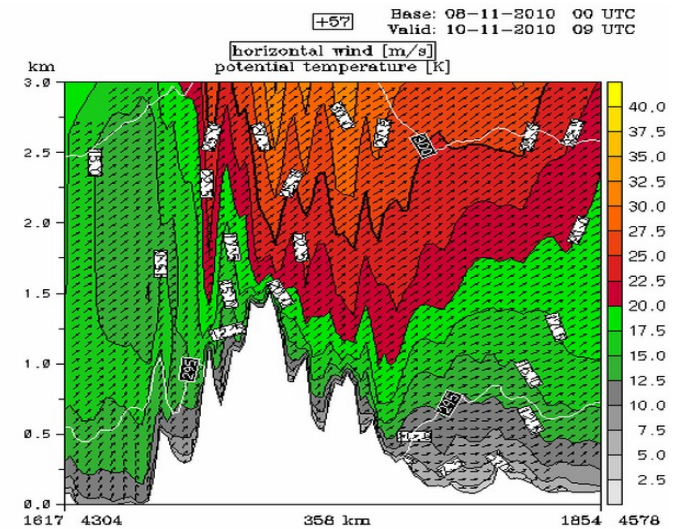
Vertikalni presjeci



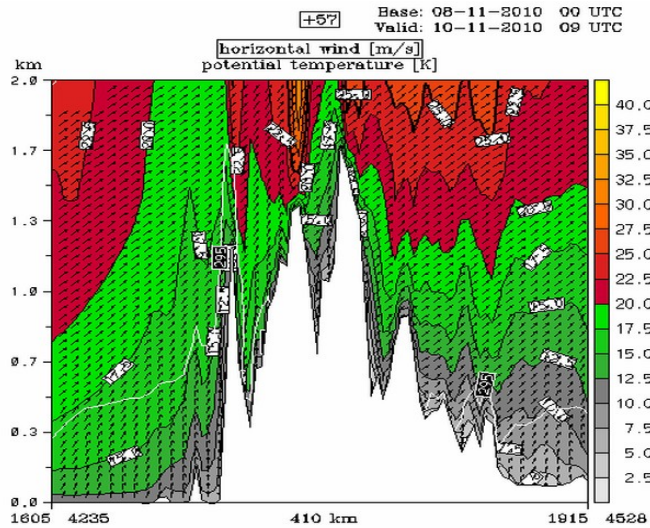
M. Lošinj - Senj - Zagreb



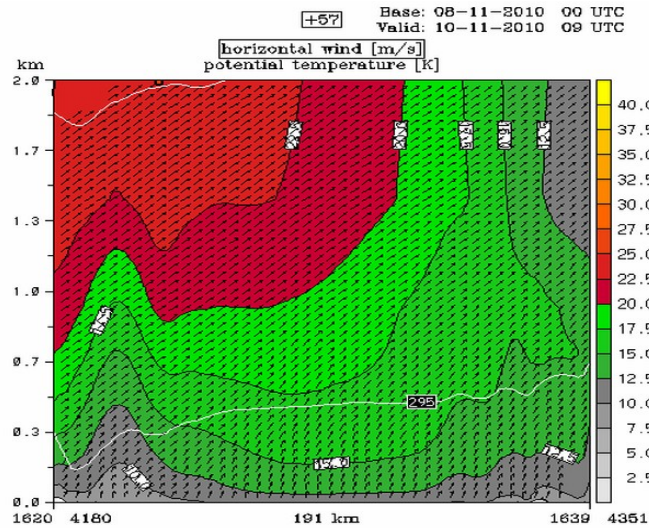
N. Mesto - Pleso - Osijek - Dalj



Komiža - Split - Sl. Brod



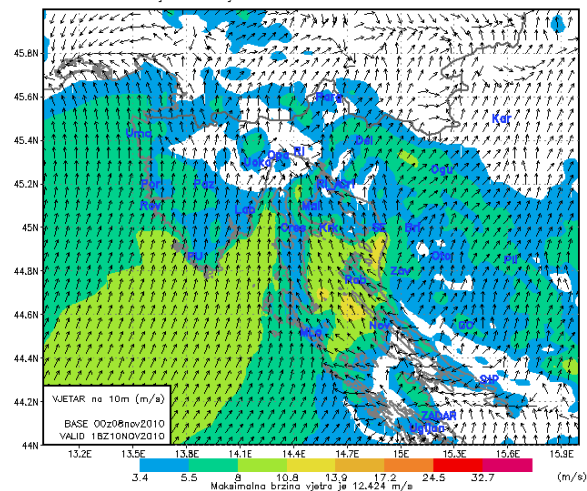
Palagruža - Makarska - Osijek



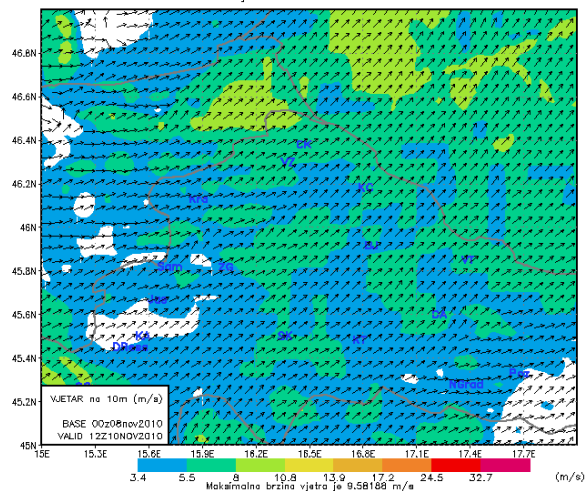
Gargano - Split

Vietaar – 2km dinamička adaptacija

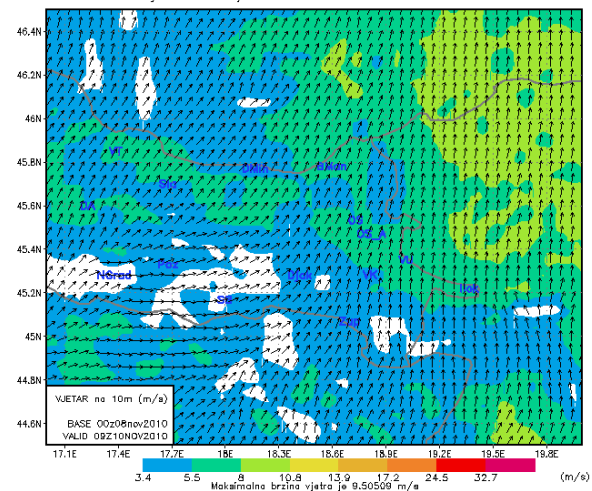
DADA Senj 10 m Vjetaar u 18Z10NOV2010 UTC 66h forecast



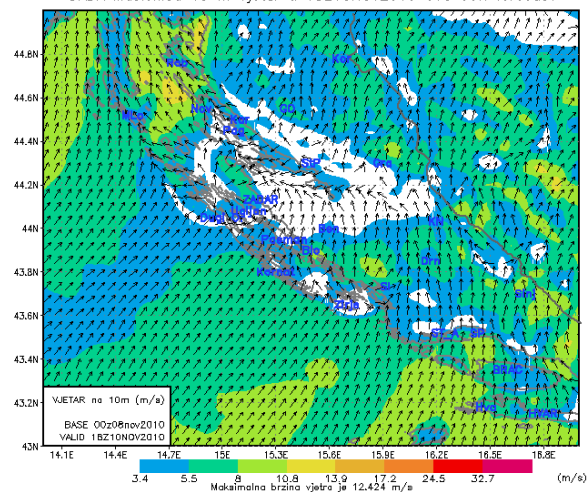
DADA Karlovac 10 m Vjetaar u 12Z10NOV2010 UTC 60h forecast



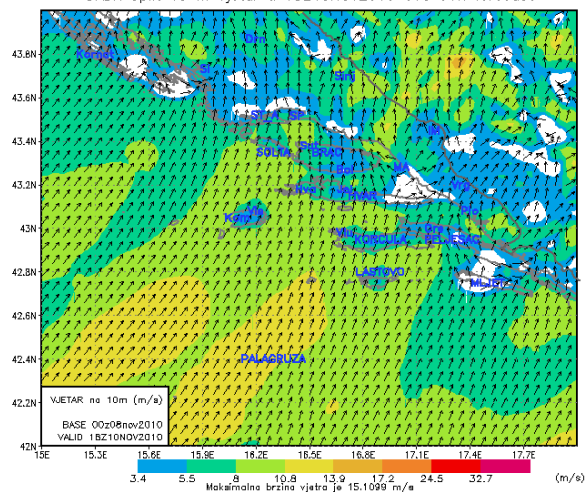
DADA Osijek 10 m Vjetaar u 09Z10NOV2010 UTC 57h forecast



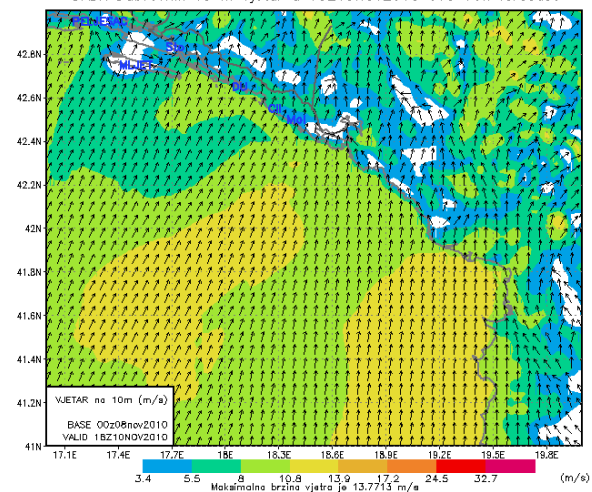
DADA Maslenica 10 m Vjetaar u 18Z10NOV2010 UTC 66h forecast



DADA Split 10 m Vjetaar u 18Z10NOV2010 UTC 66h forecast

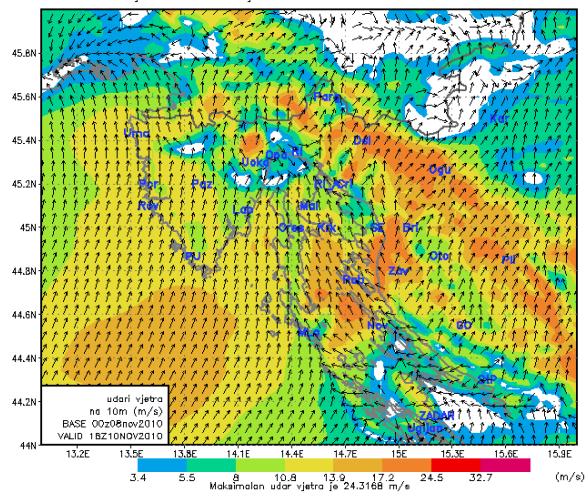


DADA Dubrovnik 10 m Vjetaar u 18Z10NOV2010 UTC 66h forecast

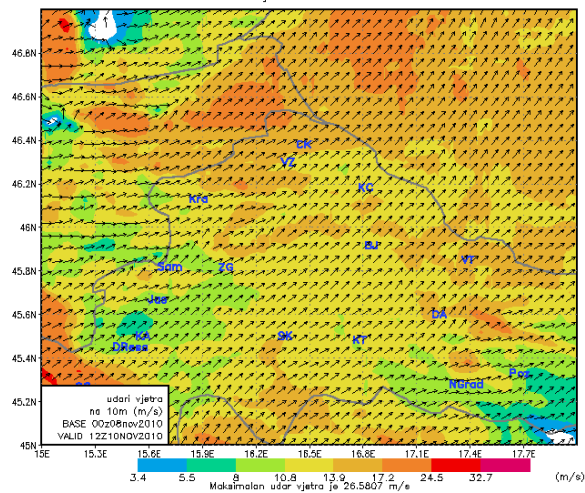


Udari vjetra

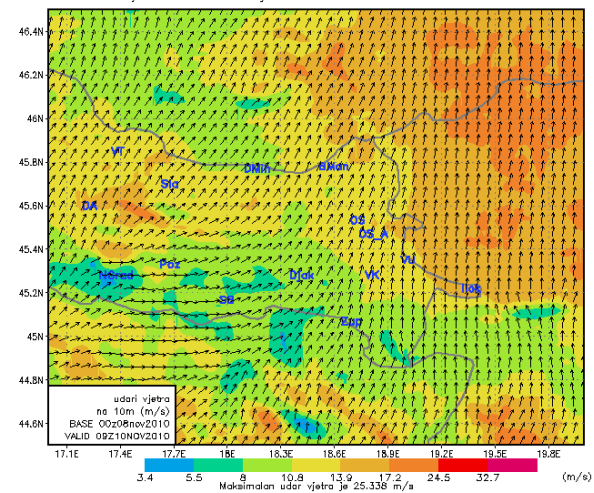
DADA Senj 10 m udari vjetra u 18Z10NOV2010 UTC 66h forecast



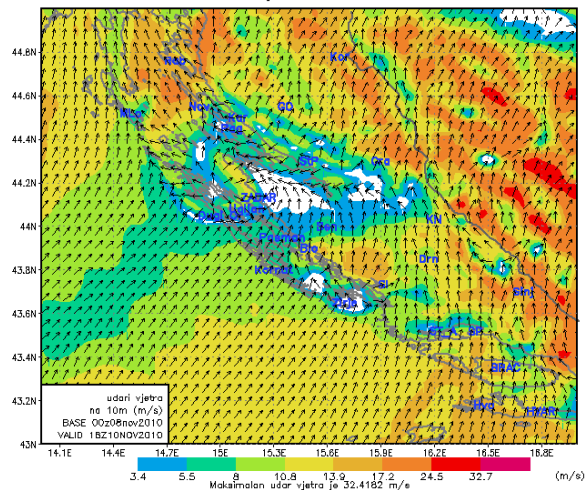
DADA Karlovac 10 m udari vjetra u 12Z10NOV2010 UTC 60h forecast



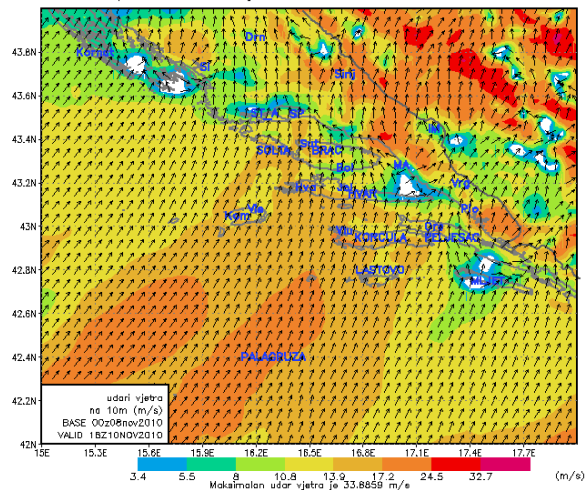
DADA Osijek 10 m udari vjetra u 09Z10NOV2010 UTC 57h forecast



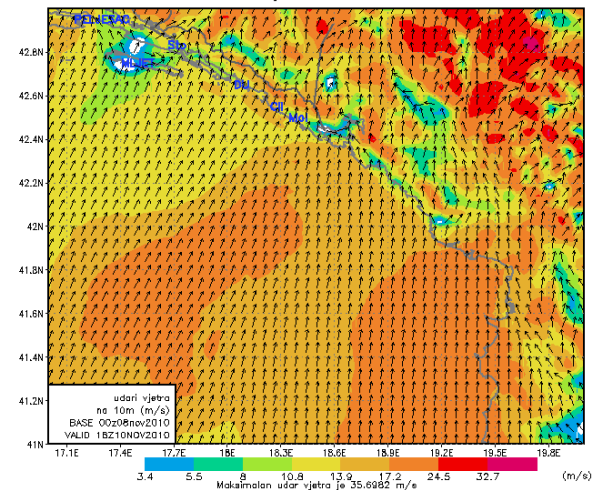
DADA Maslenica 10 m udari vjetra u 18Z10NOV2010 UTC 66h forecast



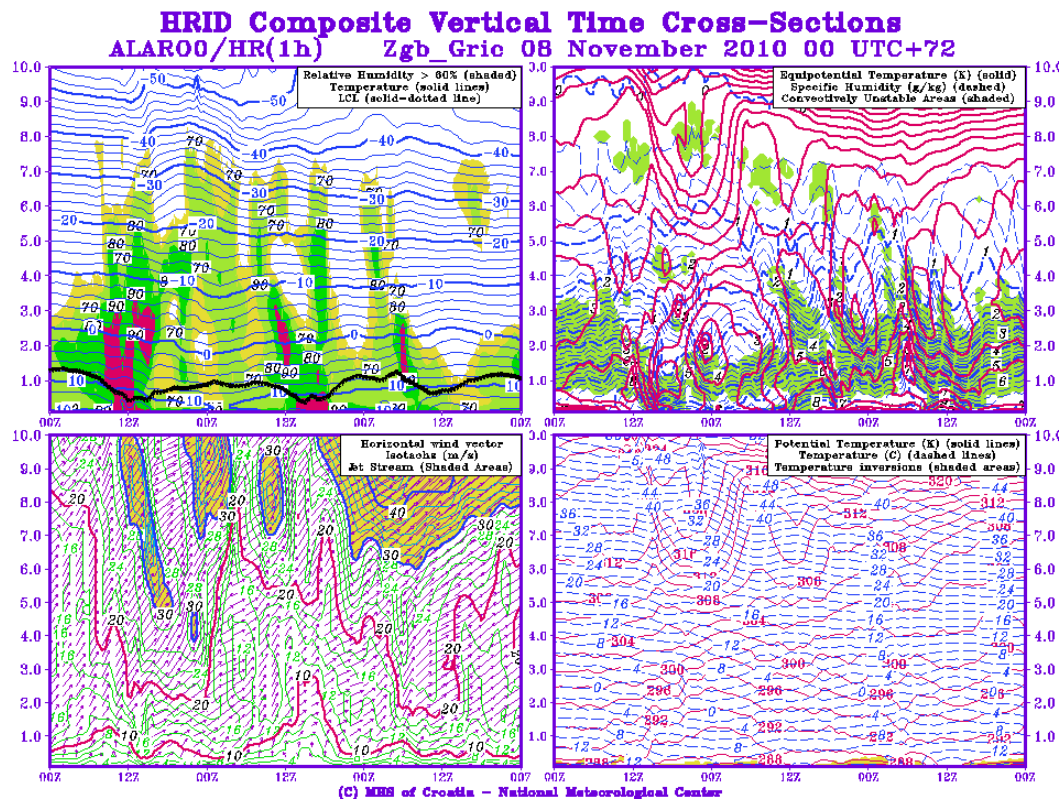
DADA Split 10 m udari vjetra u 18Z10NOV2010 UTC 66h forecast



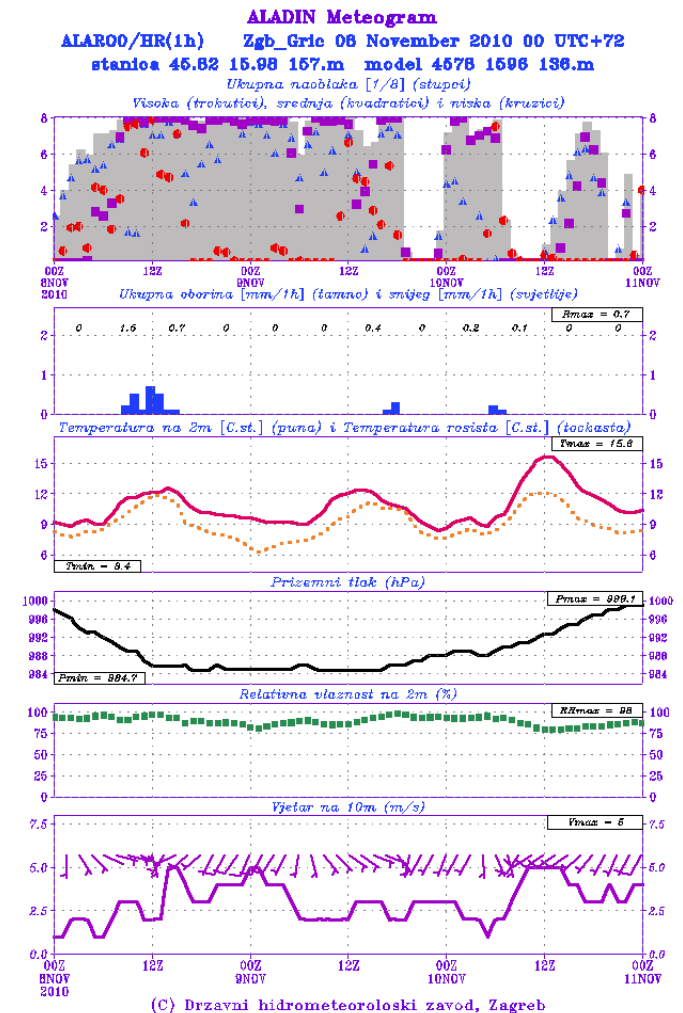
DADA Dubrovnik 10 m udari vjetra u 18Z10NOV2010 UTC 66h forecast



HRID



Meteogram

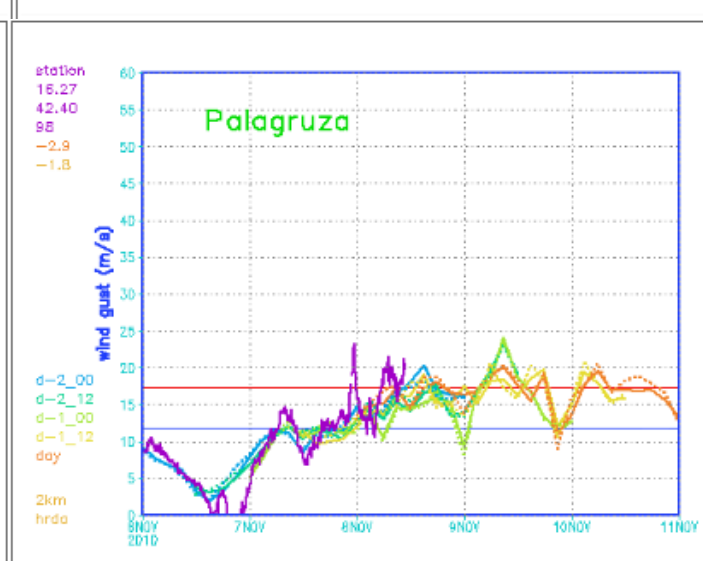
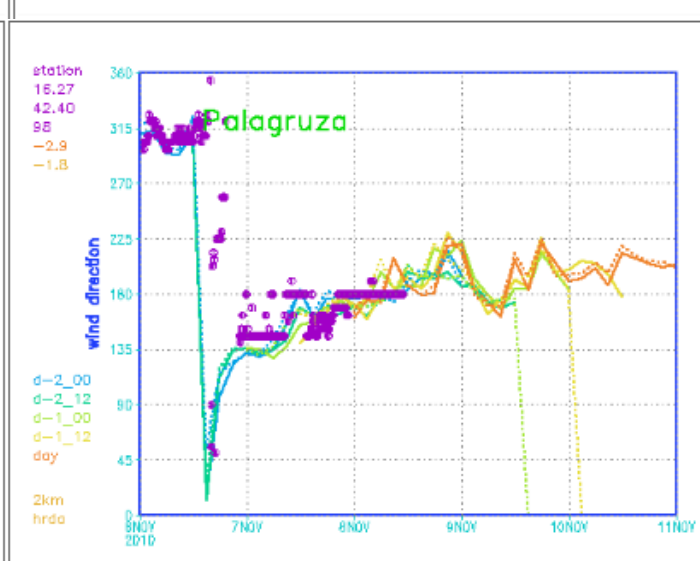
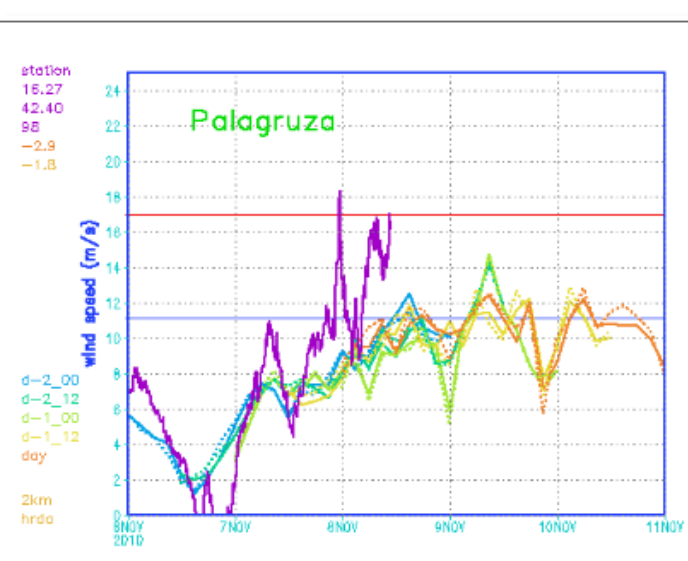
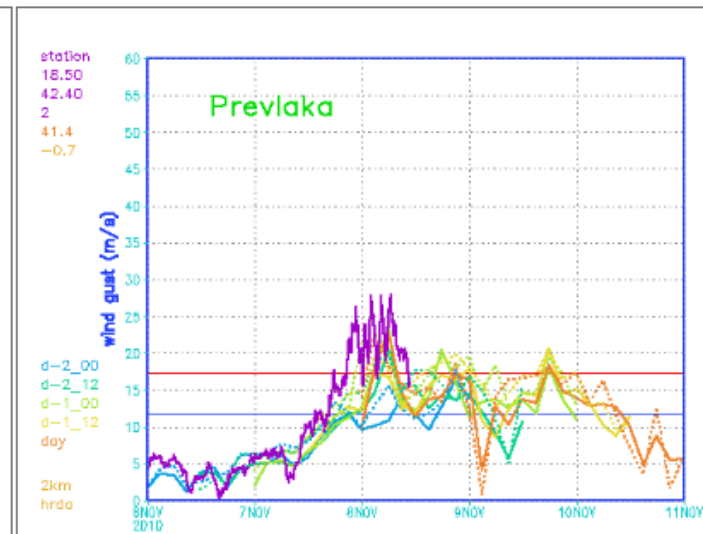
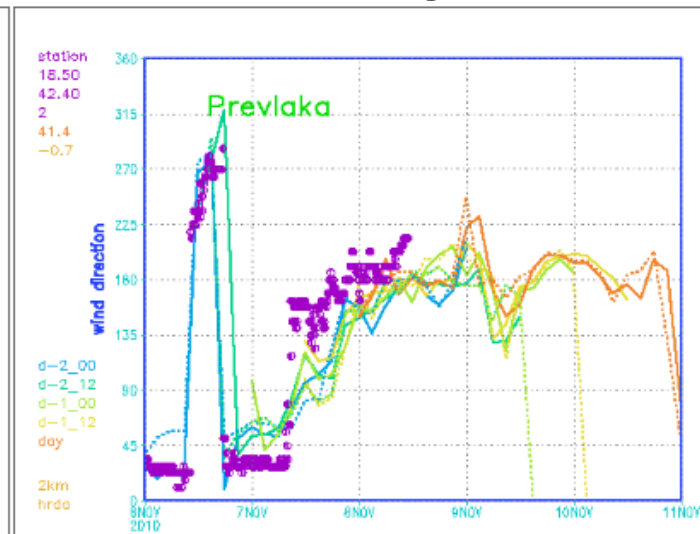
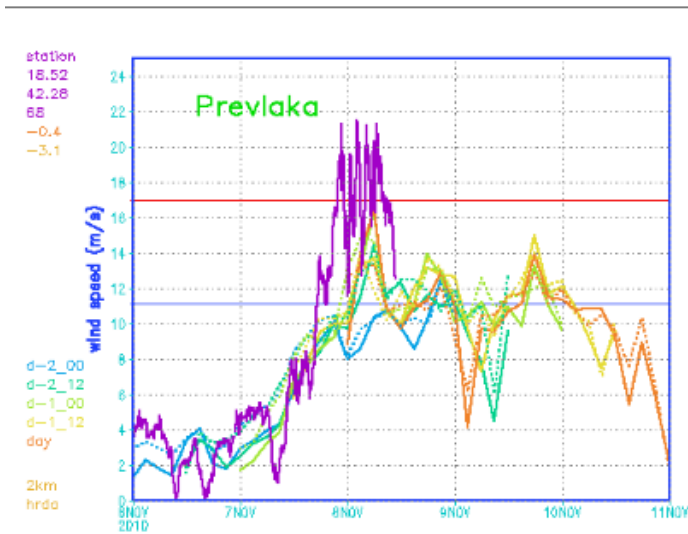


Usporedba s mjerenjima vjetera

brzina

smjer

udari

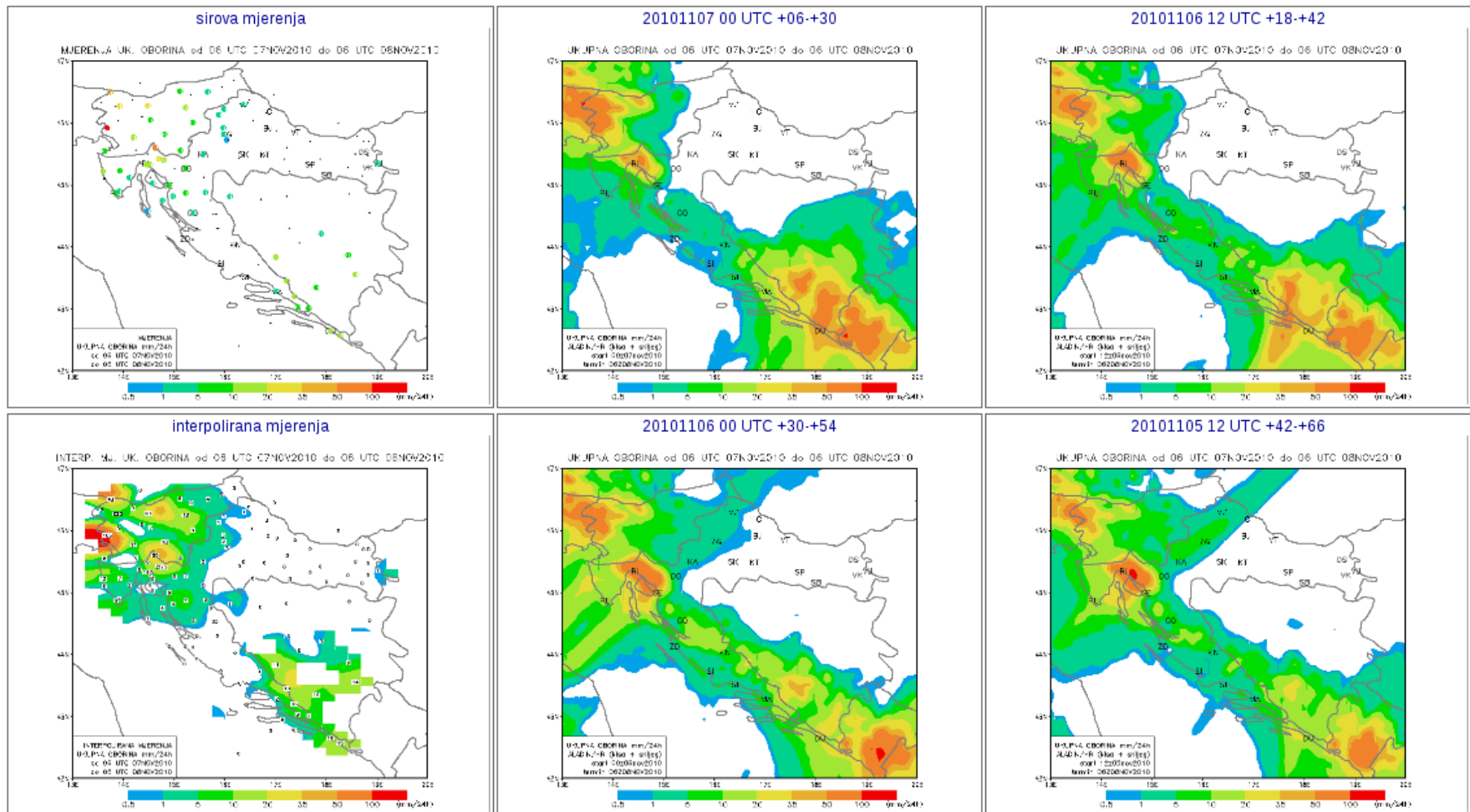


Usporedba s mjerenjima



oborina 06 UTC 20101107 - 06 UTC 20101108	oborina 06 UTC 20101106 - 06 UTC 20101107	oborina 06 UTC 20101105 - 06 UTC 20101106
oborina 06 UTC 20101104 - 06 UTC 20101105	oborina 06 UTC 20101103 - 06 UTC 20101104	oborina 06 UTC 20101102 - 06 UTC 20101103
oborina 06 UTC 20101101 - 06 UTC 20101102	oborina 06 UTC 20101031 - 06 UTC 20101101	oborina 06 UTC 20101030 - 06 UTC 20101031

Usporedba 24 satnih polja oborine sa mjerenjima
06 UTC 20101107 - 06 UTC 20101108



Istraživanje

- Analiza vremenske situacije
 - Na zahtjev korisnika (pad letjelice)
 - Opasne pojave (ekstremi, bura)
 - Pogrešne prognoze (magla)
- Razvoj i testiranje novih shema
 - Nove prognostičke varijable
 - Prognostička konvekcija
 - Nehidrostatska dinamika

Istraživanje - nastavak

- Procjena klime vjetra Hrvatske
 - 8 km za sve prognostičke varijable
 - 2 km za vjetar
 - Poster: Dynamical downscaling of wind resource in complex terrain of Croatia
 - Projekt "Wind resources and forecasting in complex terrain of Croatia" - WINDEX
- Asimilacija podataka
 - Slijedeće predavanje :)