

# Operational use of the dynamical adaptation for high-resolution ALADIN forecast in Dinaric Alps

Second Workshop on Statistical and Dynamical Adaptation

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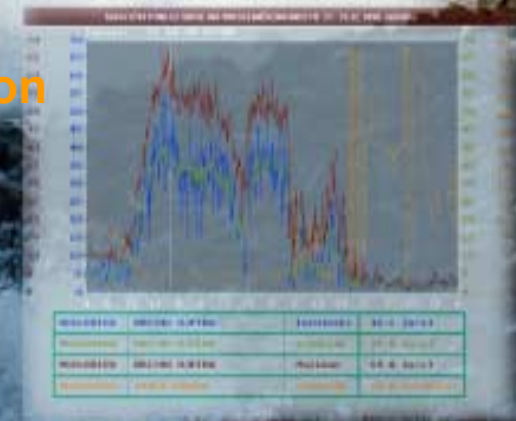
Meteorological and Hydrological Service

Grič 3, HR-10000 Zagreb, Croatia

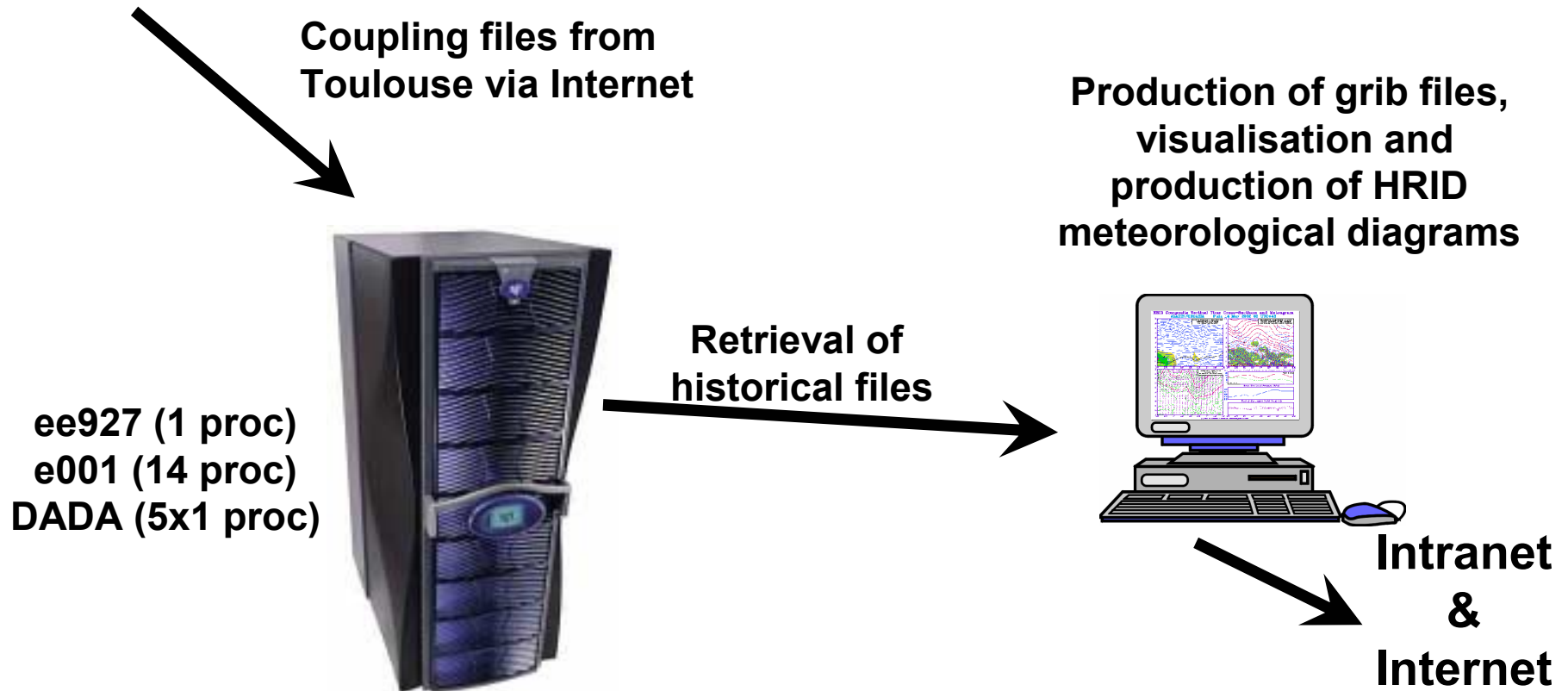
[ivateks@cirus.dhz.hr](mailto:ivateks@cirus.dhz.hr)



DHMZ



# The ALADIN Croatia operational flowchart



## **SGI ORIGIN 3400**

**16 x 400 MHz IP35 Processors  
Main memory size: 12288 Mbytes  
OS IRIX 6.5**

## **HP KAYAK i686**

**2 x 800 MHz Processors  
Main memory size: 2 x 128 Mbytes  
OS Red Hat LINUX 6.2 Kernel 2.2.16**

# Domains and Orography

## LACE domain

- resolution 12.2 km,
- 229x205 grid points (240x216 Extension zone),
- 37 vertical  $\eta$ -levels, time-step 514 sec,
- corners: SW (34.00,2.18), NE (55.62,39.08).

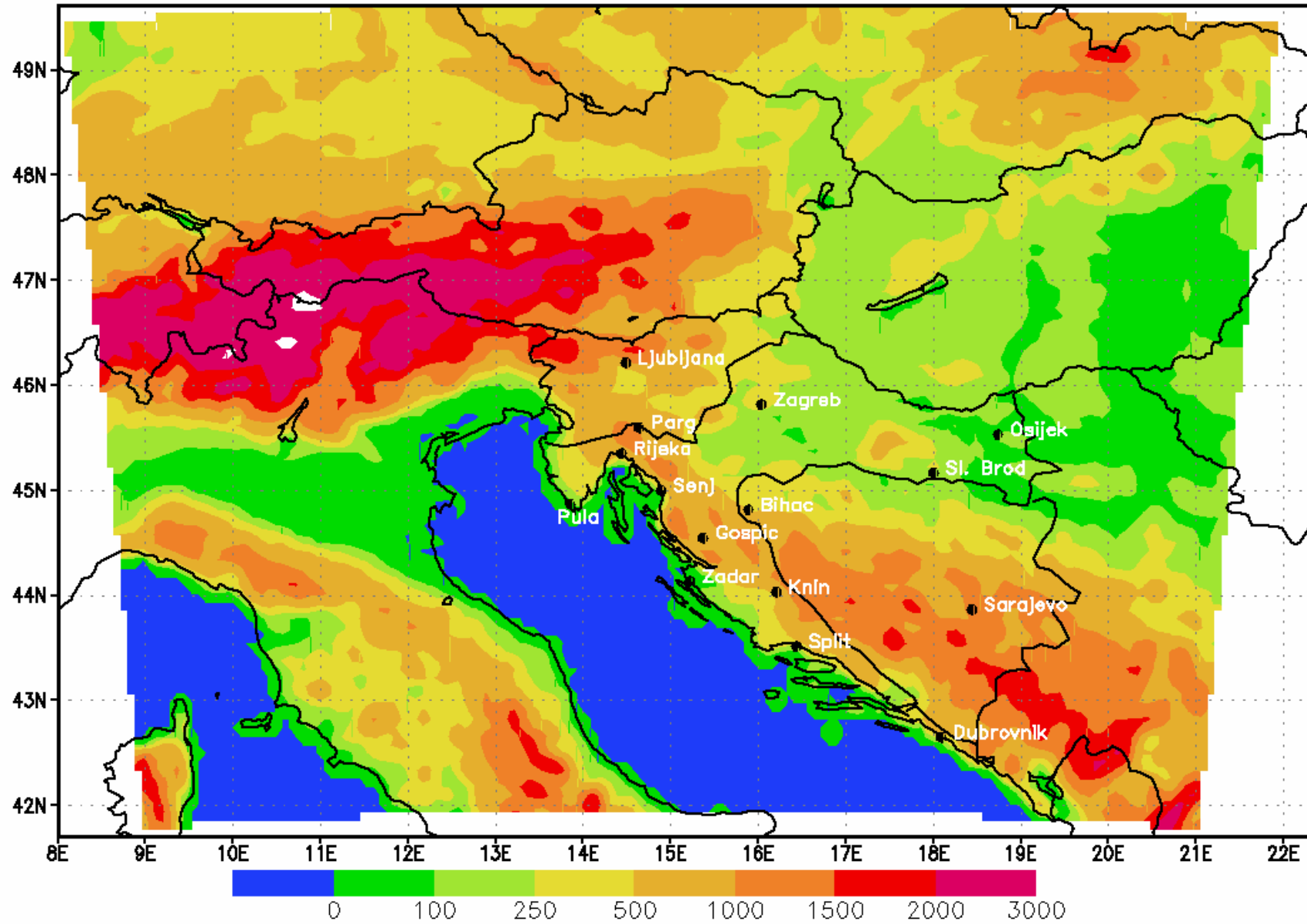
## HRv8 domain

- resolution 8 km,
- 127x109 grid points (144x120 Extension zone),
- 37 vertical  $\eta$ -levels, time-step 327 sec,
- corners: SW (41.79,8.93), NE (49.53,21.98).

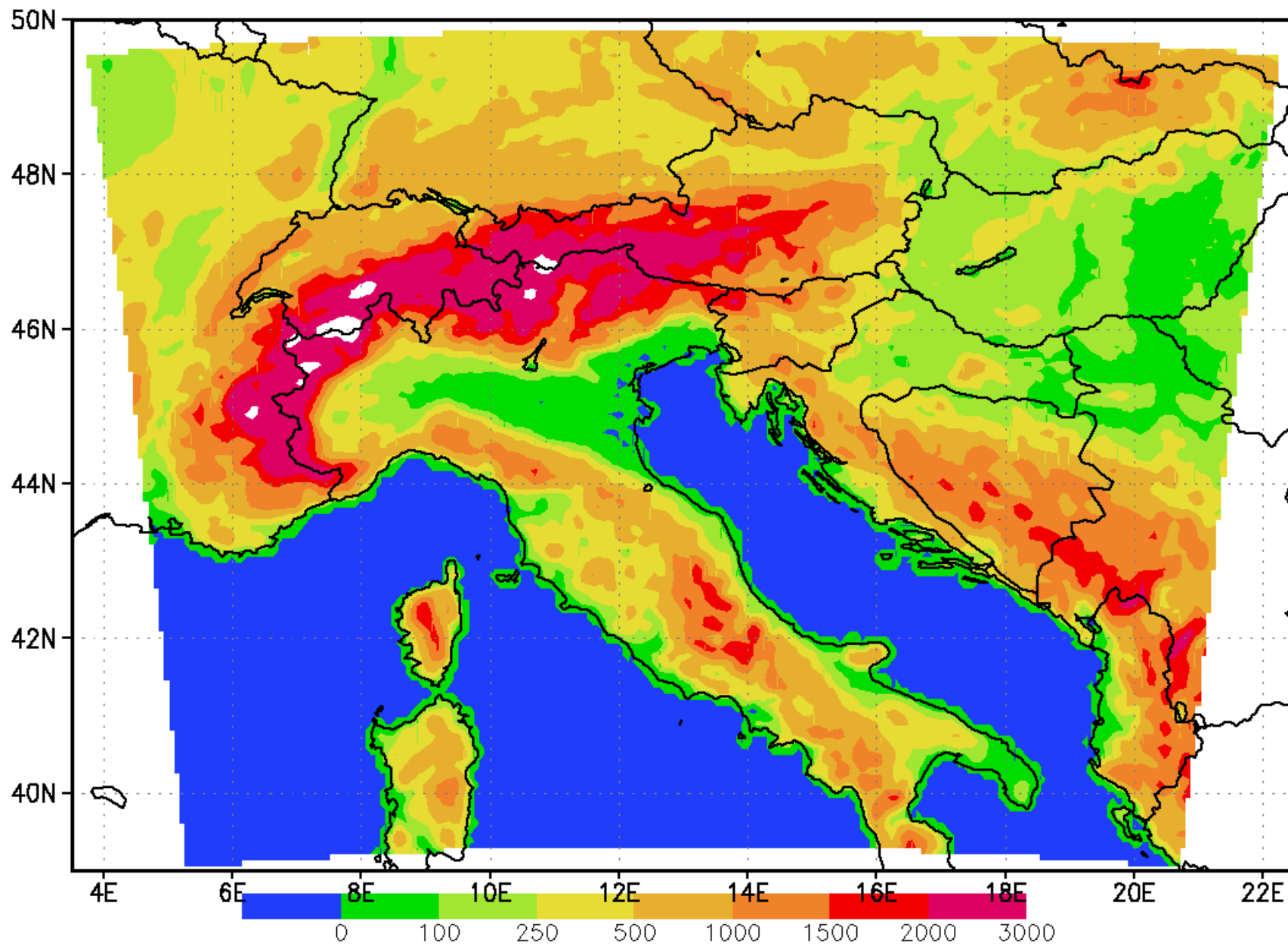
## Dynamical adaptations domains

- resolution 2 km,
- 72x72 grid points (80x80 Extension zone),
- 15 vertical  $\eta$ -levels, time-step 60 sec,
- 5 domains - Senj, Karlovac, Maslenica, Split and Dubrovnik.

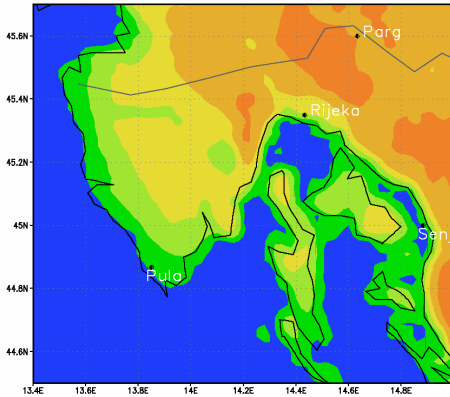
# HRv8 domain



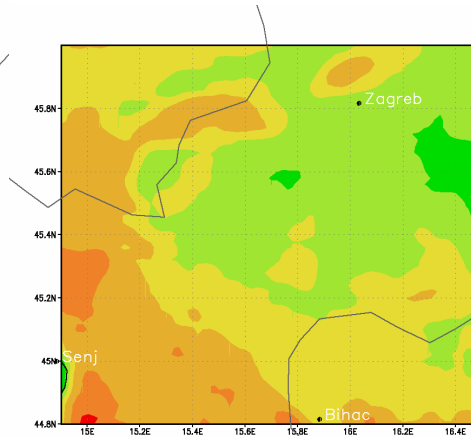
# HRn8 domain



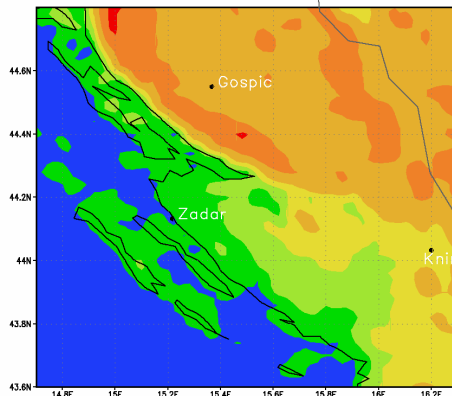
# Dynamical adaptation domains



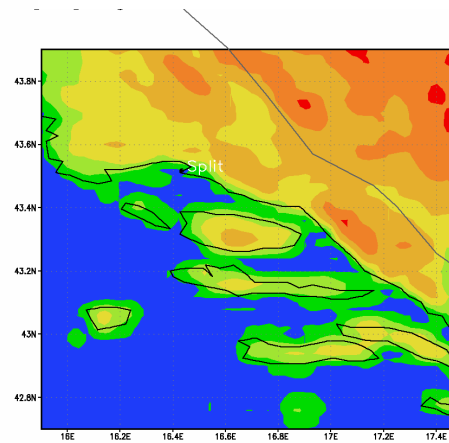
**Senj domain**



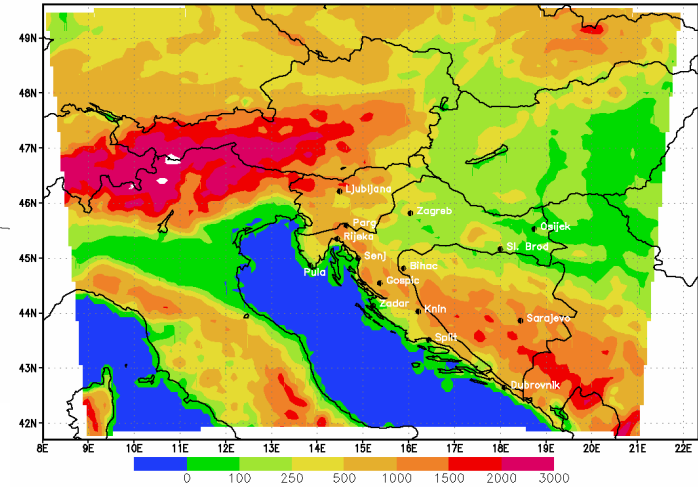
**Karlovac domain**



**Maslenica domain**

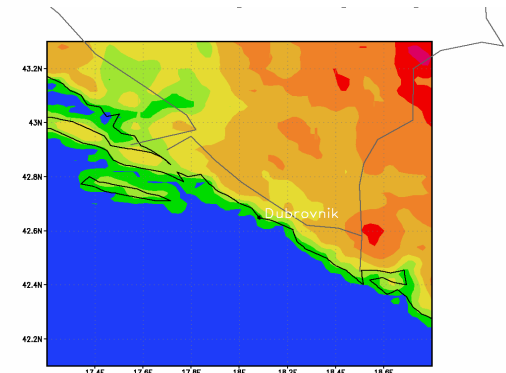


**Split domain**

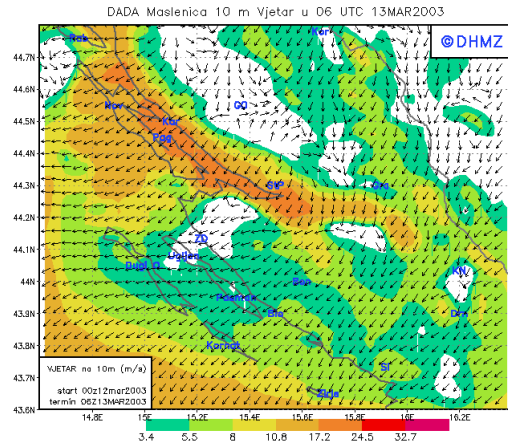


**Croatian HRv8 domain (top)**

**Dubrovnik domain (botom)**



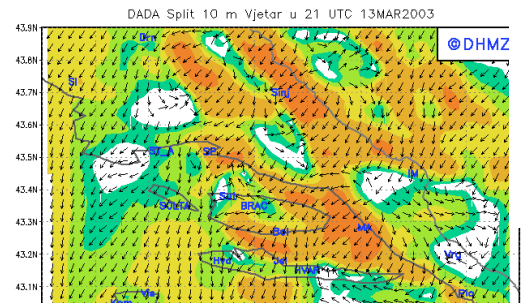
# The surface wind field for HRv8 and dynamical adaptation domains



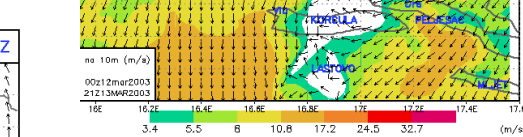
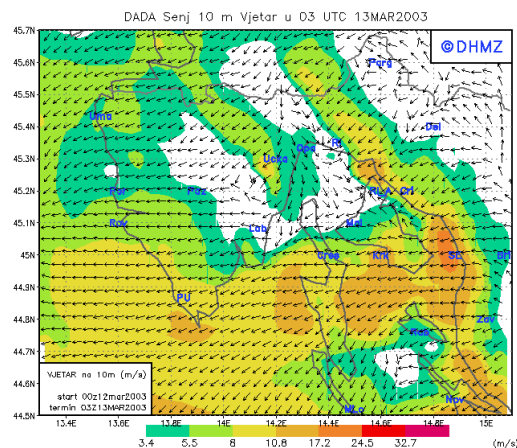
HRv8+30h

Maslenica+30h

Split+45h

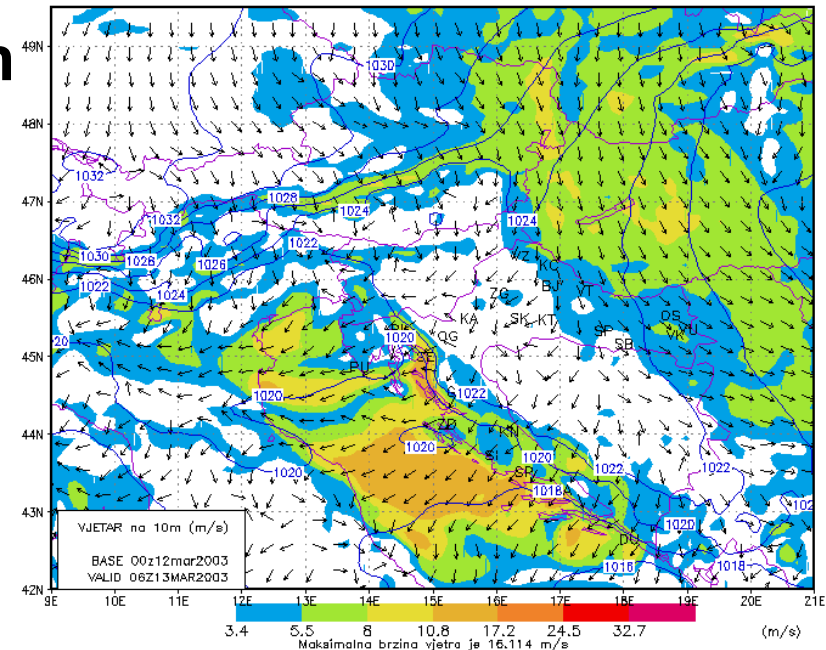


Senj+27h



Dubrovnik+33h

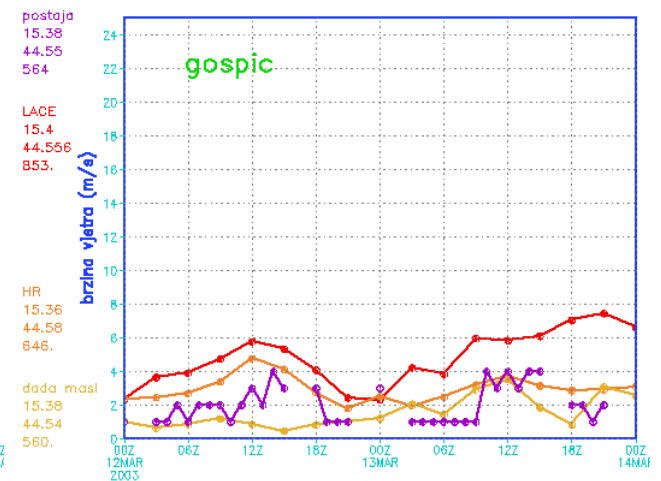
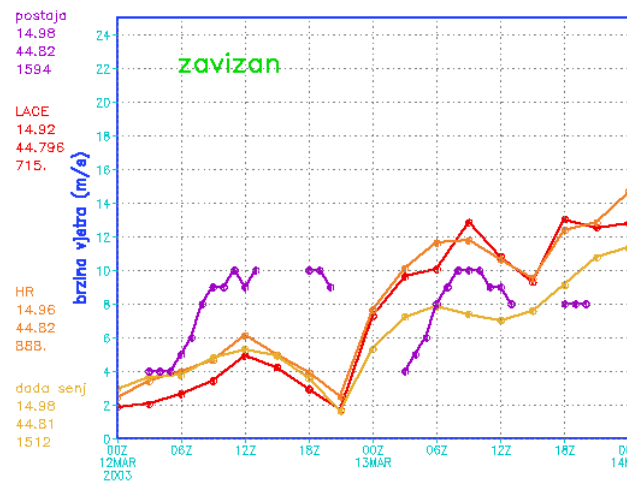
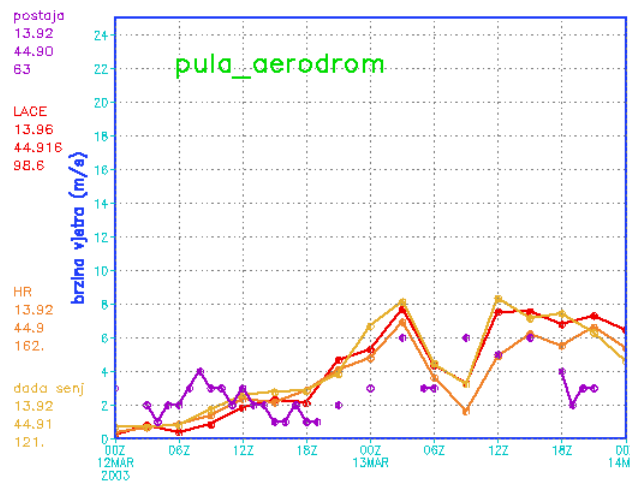
ALADIN/HR-ZG VJETAR u 06Z13MAR2003 UTC 30h forecast



start 00 UTC  
12<sup>th</sup> March  
2003

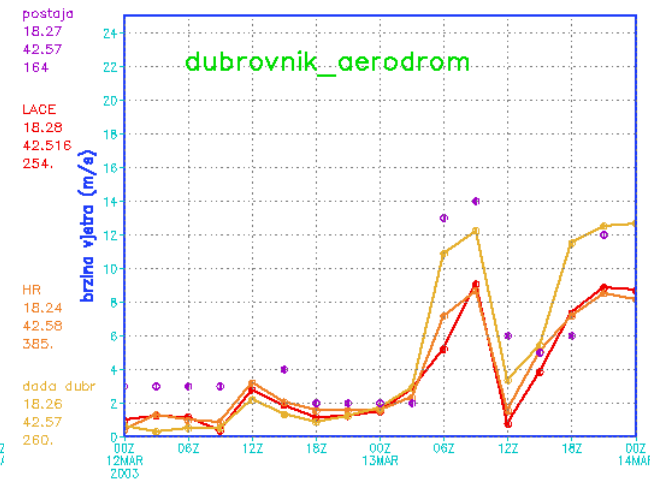
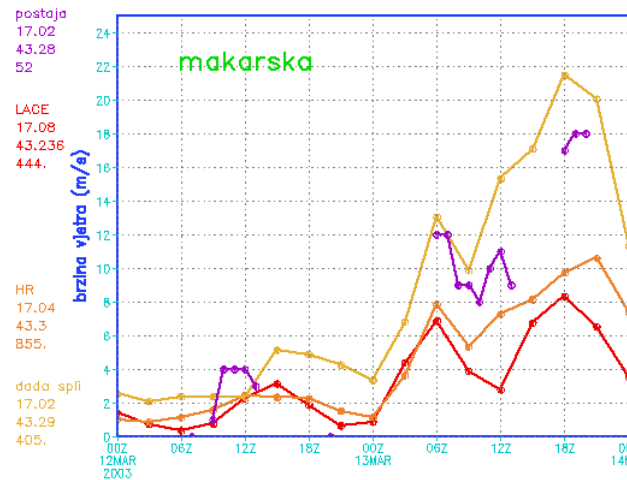
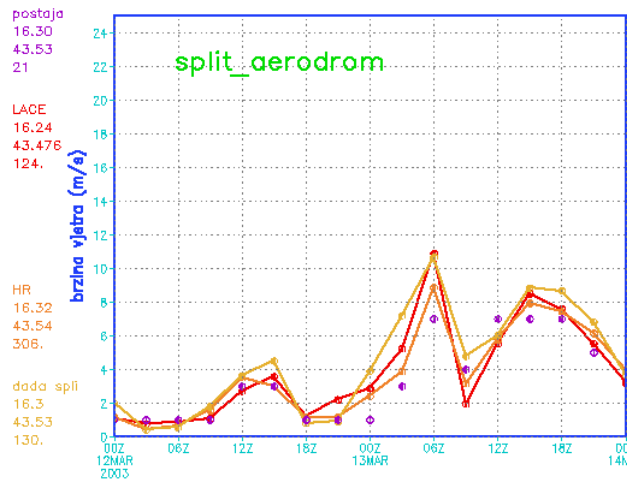
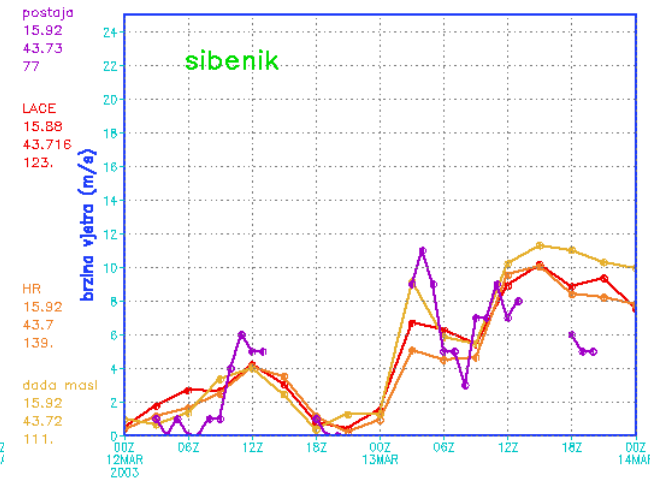
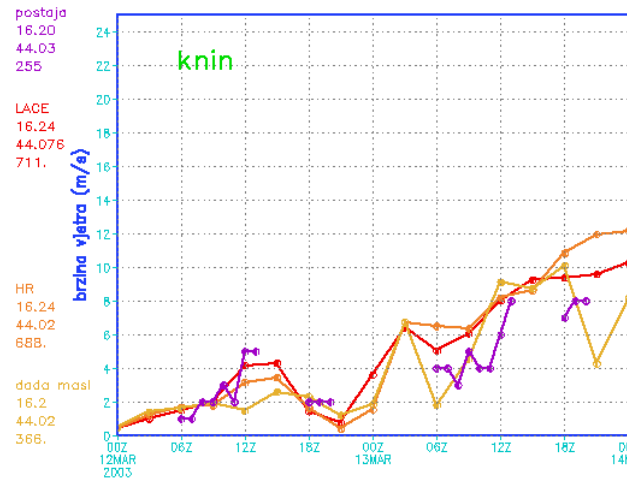
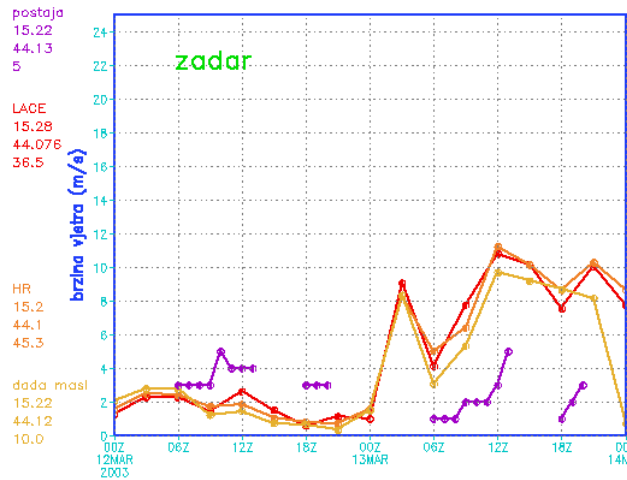
# Comparison of the surface wind field forecast with SINOP data

- red points LACE (12 km),
- orange points HRv8 (8km),
- yellow points dyn. adaptation (2km),
- violet points SINOP stations.





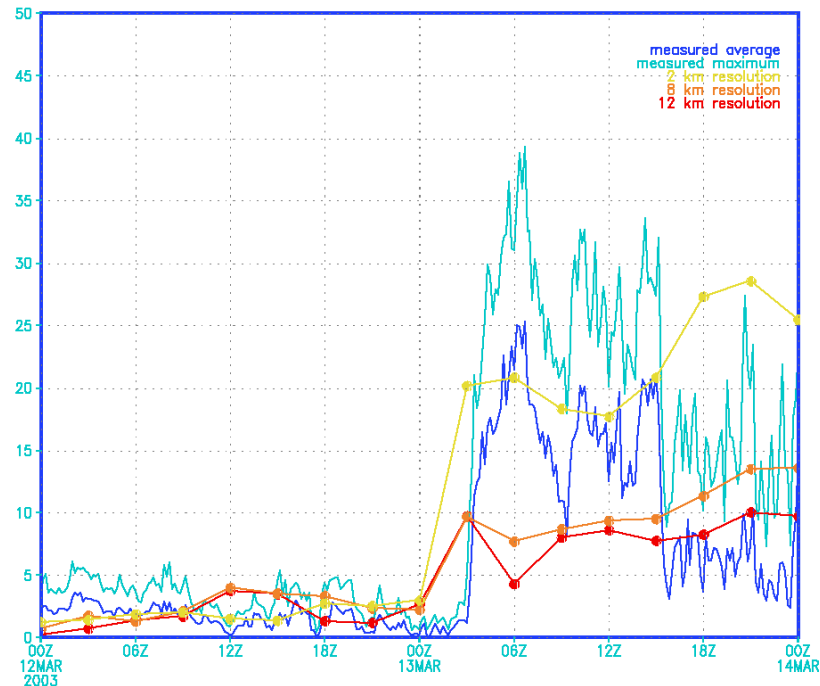
# Comparison of the surface wind field forecast with SINOP data (2)



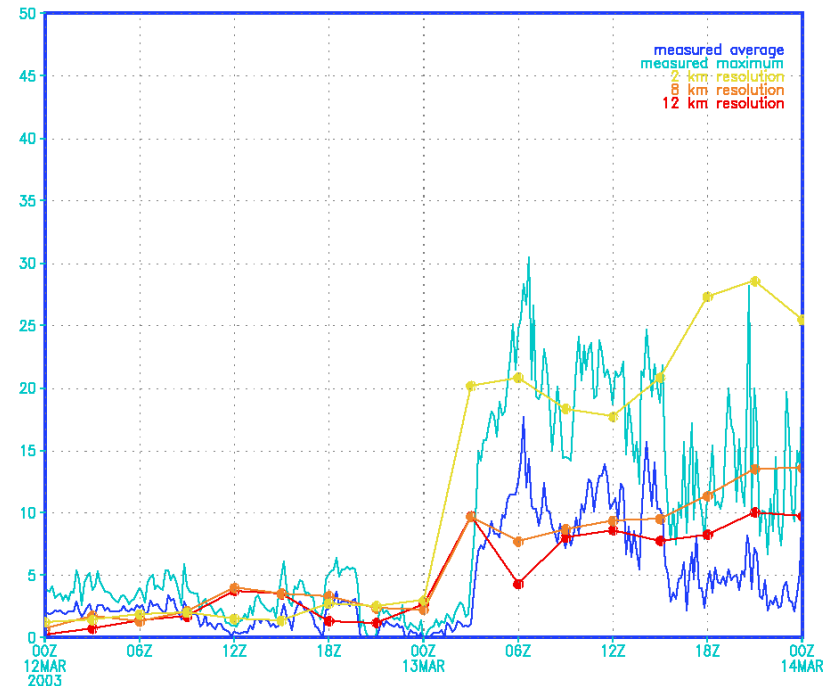
# Comparison of the surface wind field forecast with automatic station data

- red points LACE (12 km),
- orange points HRv8 (8km),
- yellow points dyn. adaptation (2km),
- dark blue 10-min mean,
- light blue gust wind speed.

Maslenicki most



Maslenicki most



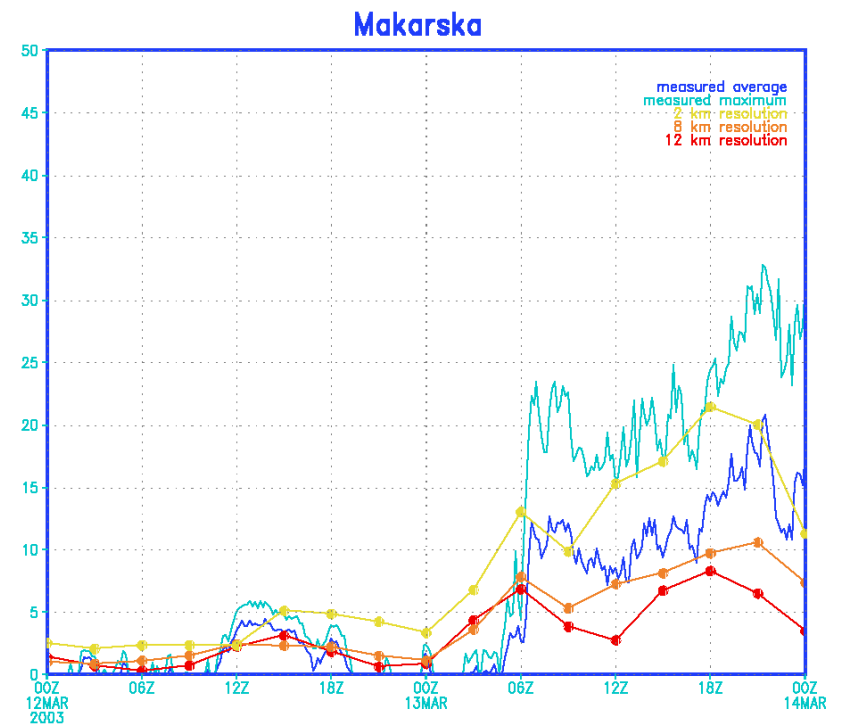
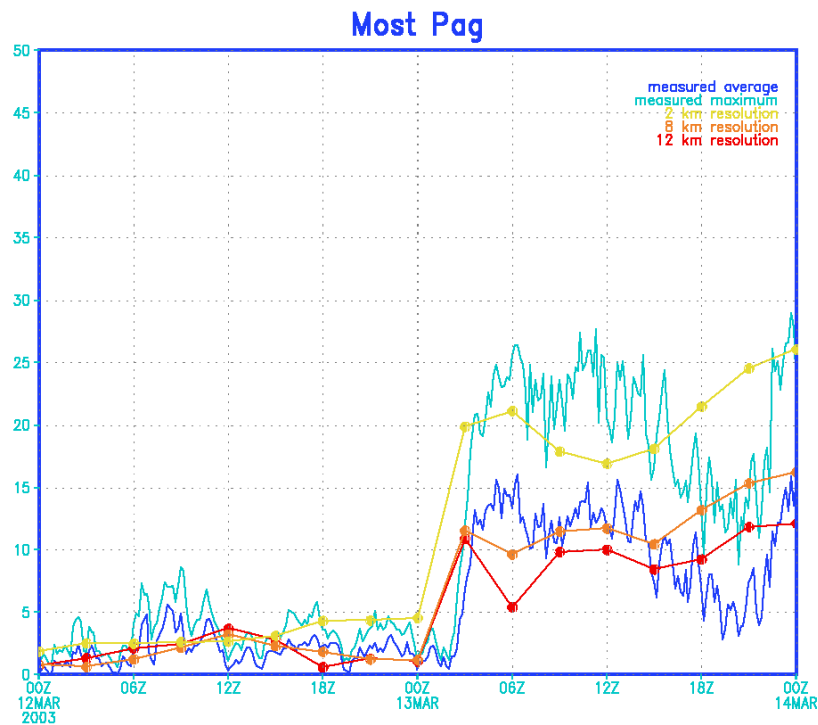
# Position of anemometers near the Maslenica bridge



# Position of anemometers near the Pag bridge



# Comparison of the surface wind field forecast with automatic station data (2)



**During the winter on seaside**



# Strong wind and transmission-line



# Strange growing trees





**Thanks a lot for your time!**

