

# Experiments with Alaro-0

Luc Gerard

29 March 2007



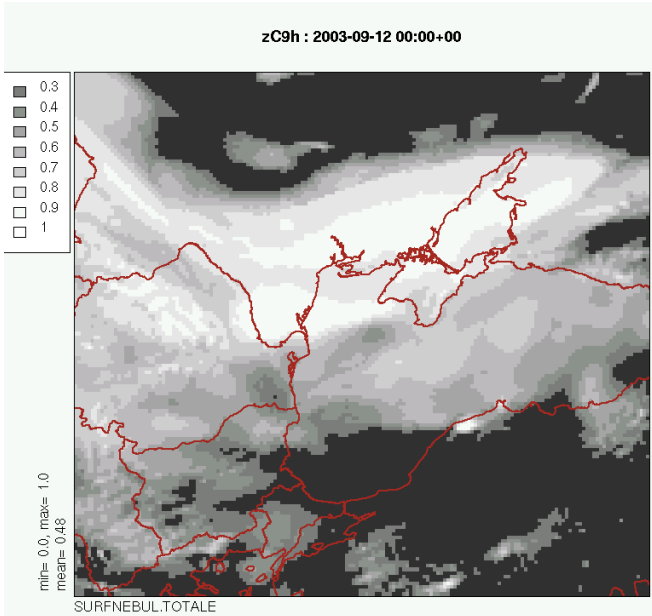
# Topics

1. Black Sea Cyclone 12-13 September 2003
2. Convective case 10 September 2005  
... continued...
3. Effect of binary optimization level

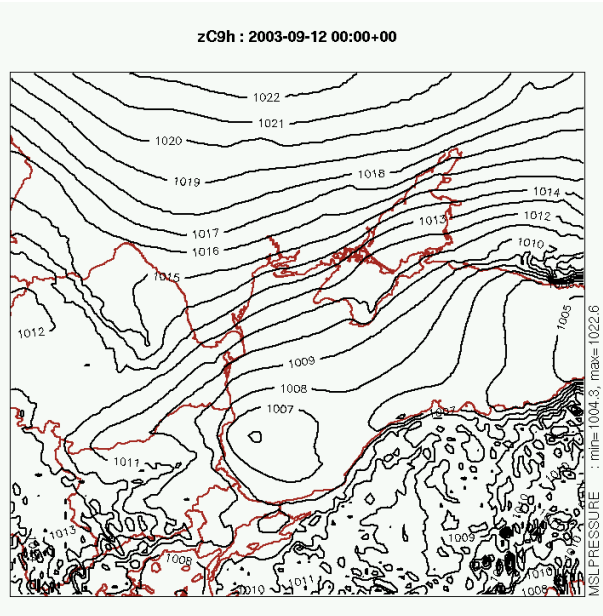


# Tropical Cyclone on Black Sea

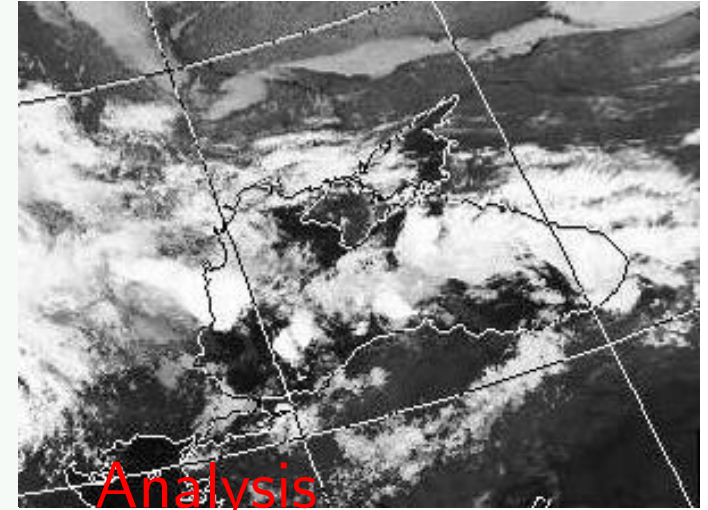
9 km



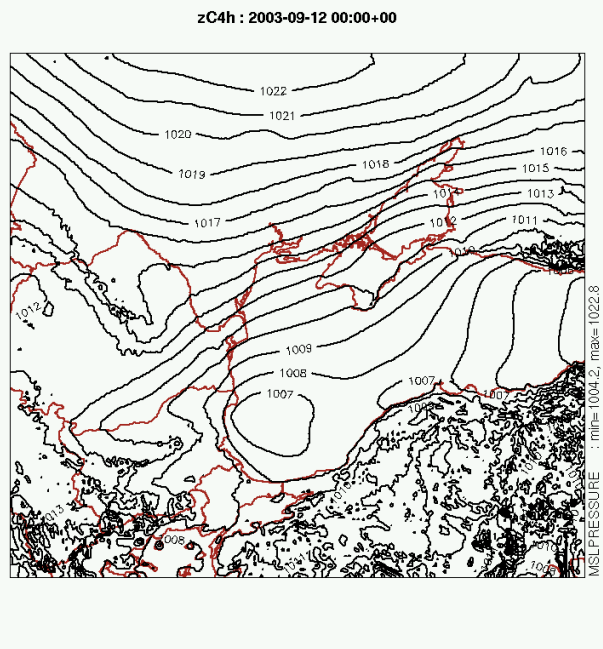
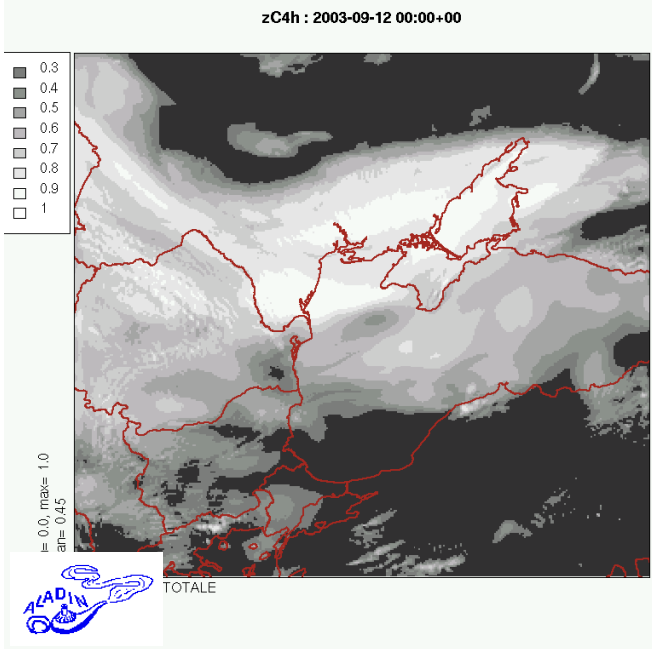
Alaro-0 Total Cloud



Alaro-0 msl pressure



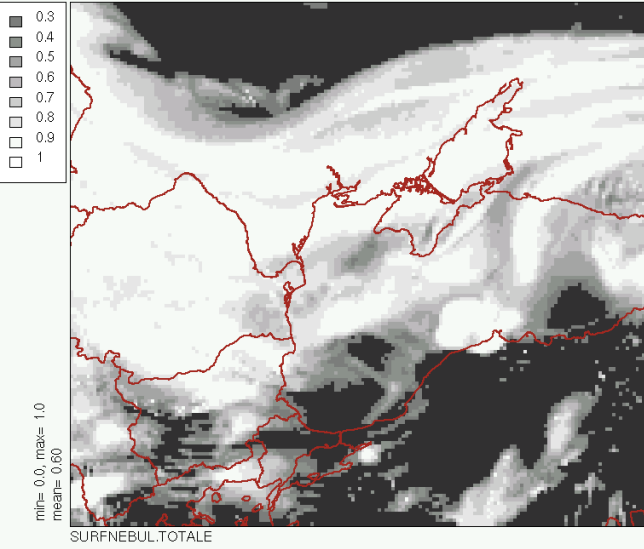
4km



# Tropical Cyclone on Black Sea

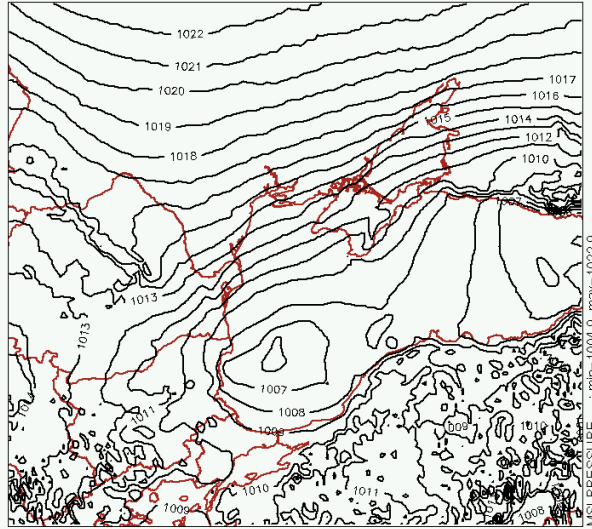
9 km

zC9h : 2003-09-12 00:00+06

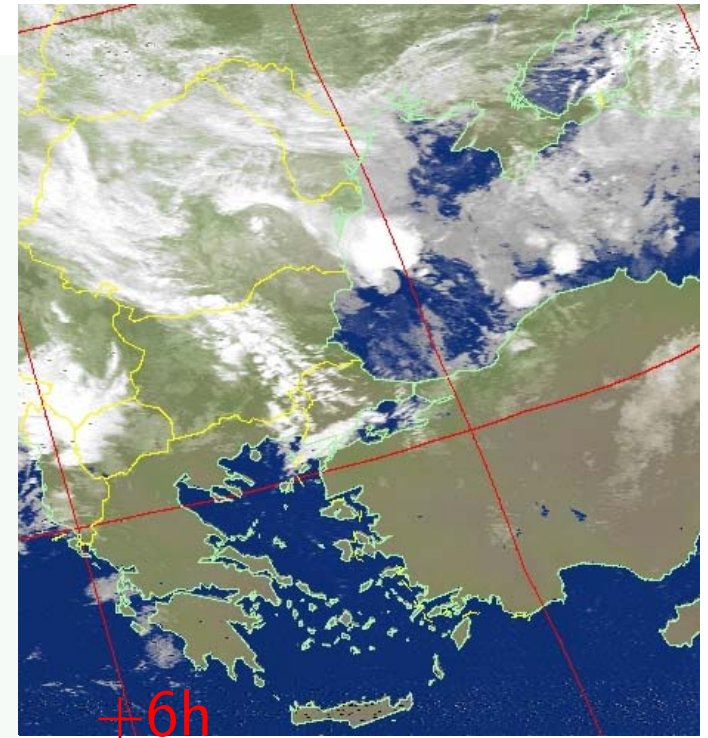


Alaro-0 Total Cloud

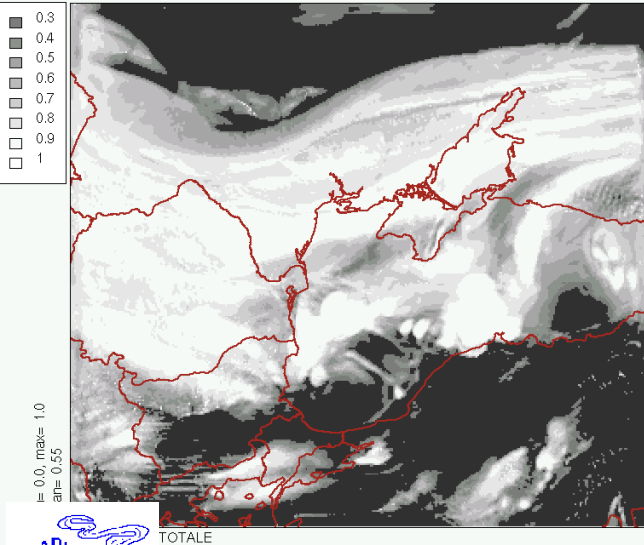
zC9h : 2003-09-12 00:00+06



Alaro-0 msl pressure

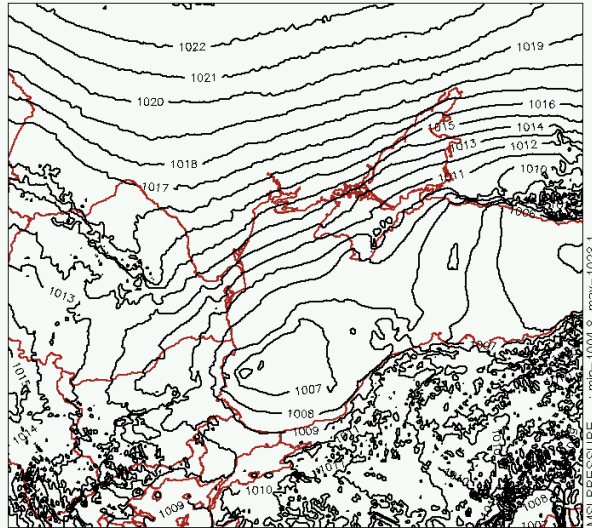


zC4h : 2003-09-12 00:00+06



4km

zC4h : 2003-09-12 00:00+06

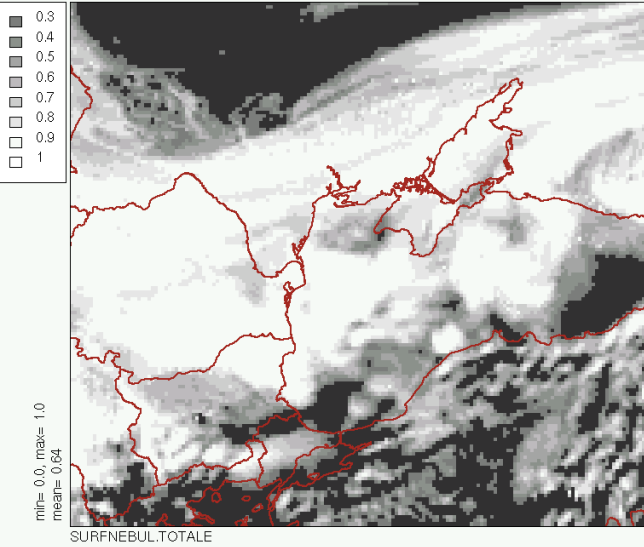




# Tropical Cyclone on Black Sea

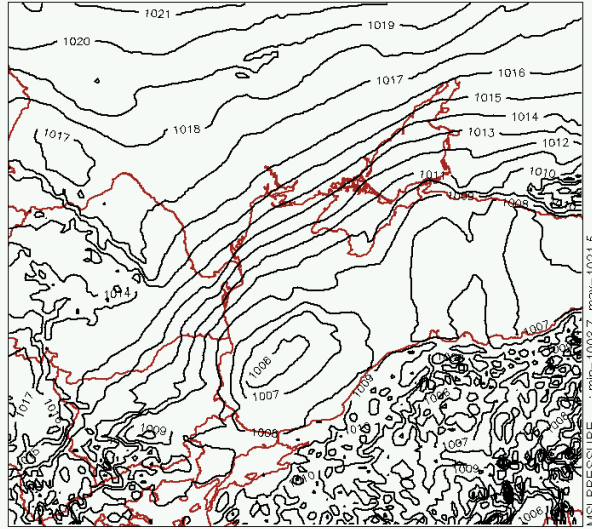
9 km

zC9h : 2003-09-12 00:00+12



Alaro-0 Total Cloud

zC9h : 2003-09-12 00:00+12

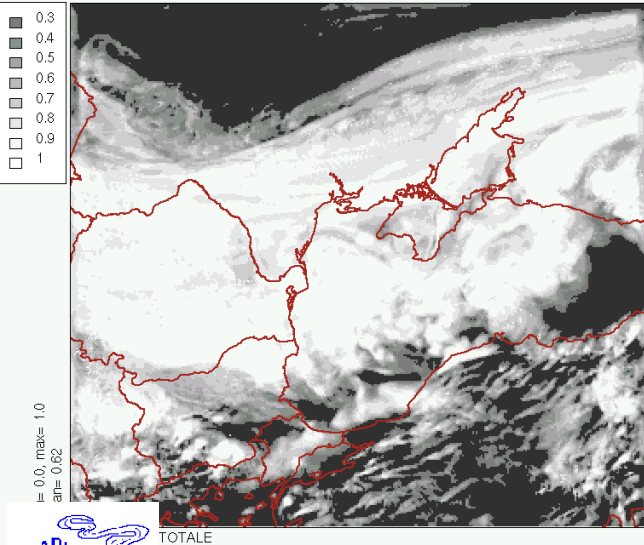


Alaro-0 msl pressure

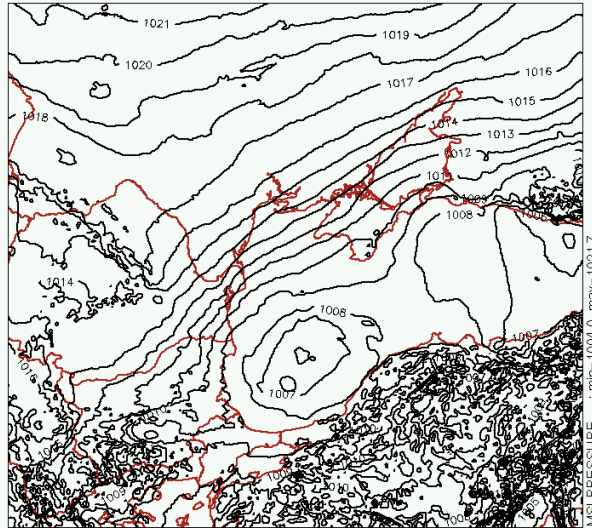
+12h

4km

zC4h : 2003-09-12 00:00+12



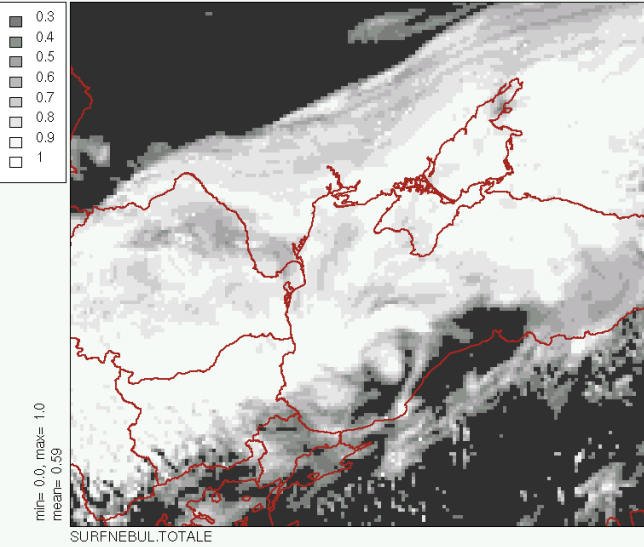
zC4h : 2003-09-12 00:00+12



# Tropical Cyclone on Black Sea

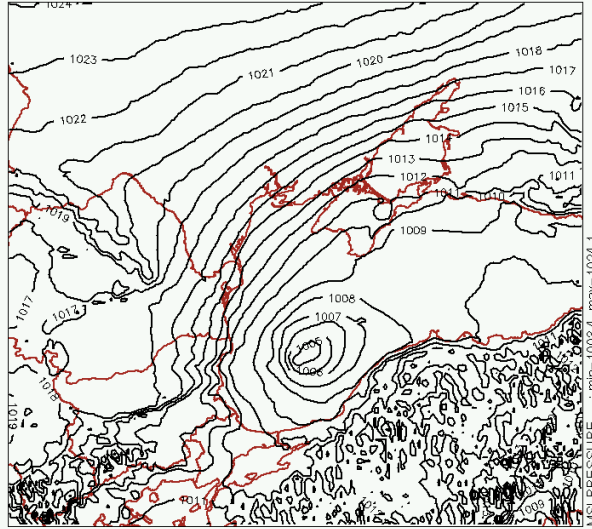
9 km

zC9h : 2003-09-12 00:00+24

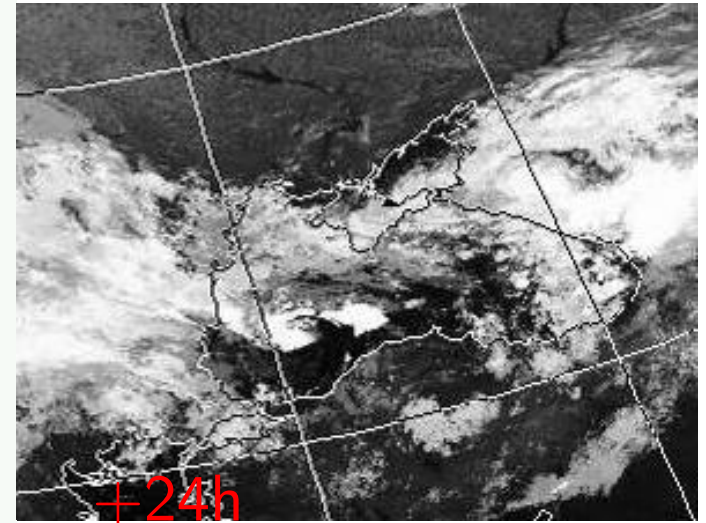


Alaro-0 Total Cloud

zC9h : 2003-09-12 00:00+24

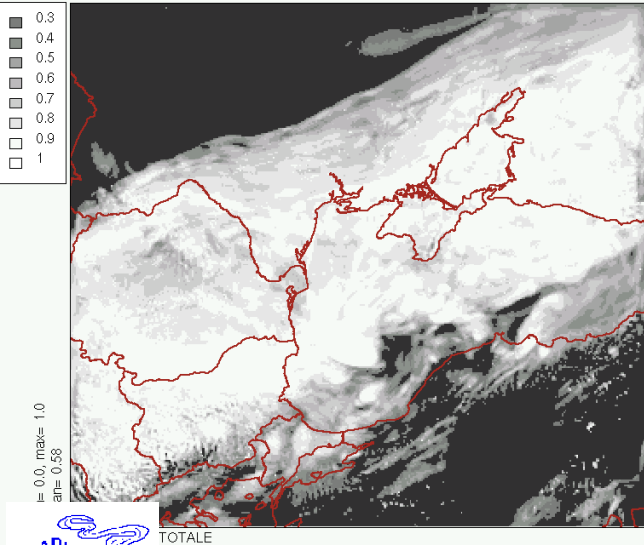


Alaro-0 msl pressure

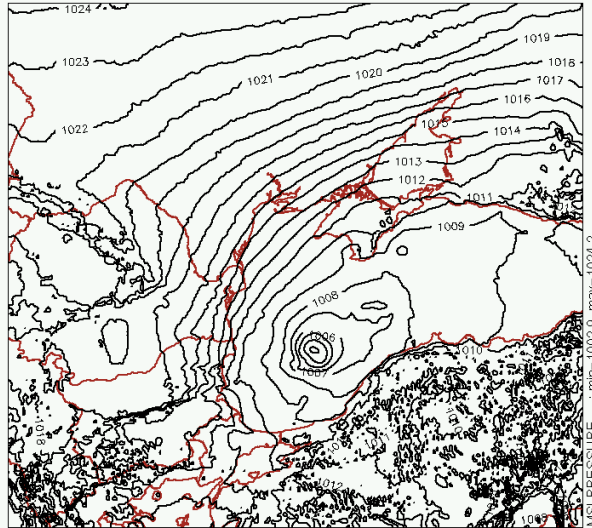


4km

zC4h : 2003-09-12 00:00+24



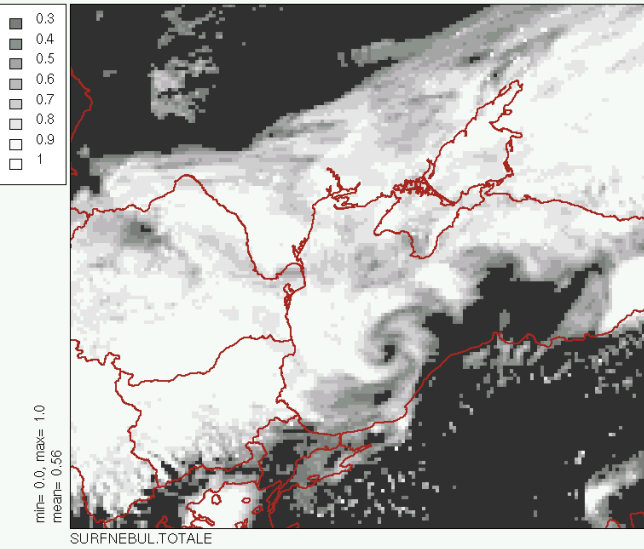
zC4h : 2003-09-12 00:00+24



# Tropical Cyclone on Black Sea

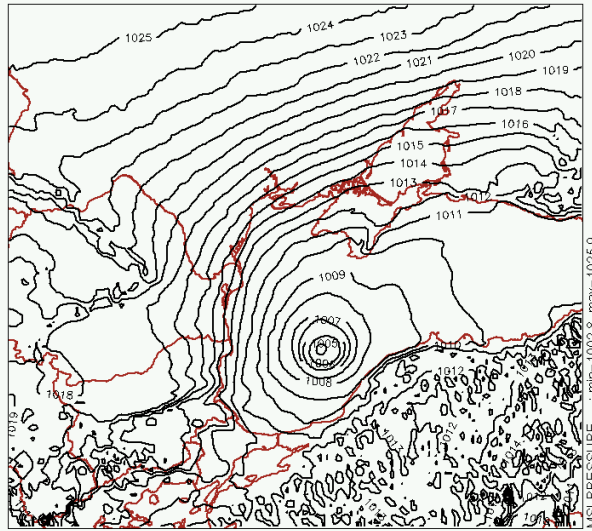
9 km

zC9h : 2003-09-12 00:00+30

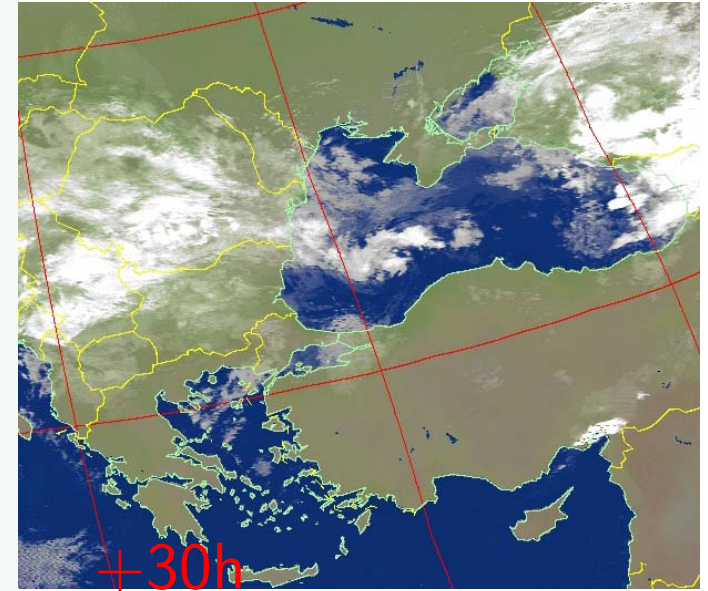


Alaro-0 Total Cloud

zC9h : 2003-09-12 00:00+30

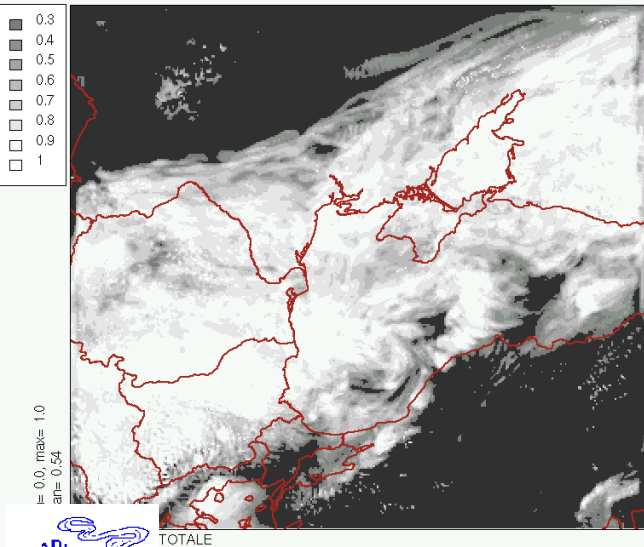


Alaro-0 msl pressure



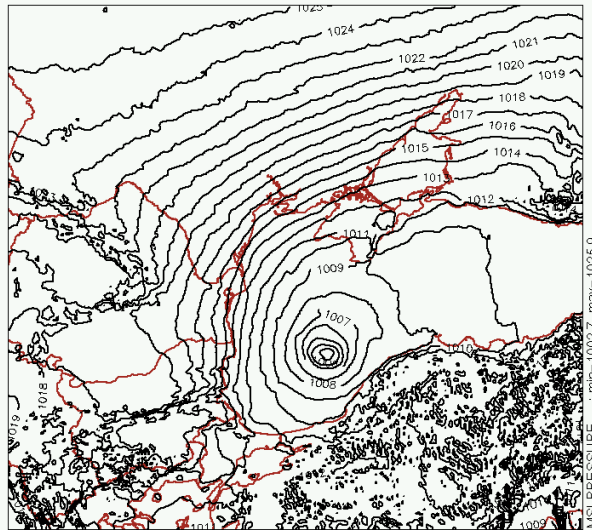
+30h

zC4h : 2003-09-12 00:00+30



4km

zC4h : 2003-09-12 00:00+30

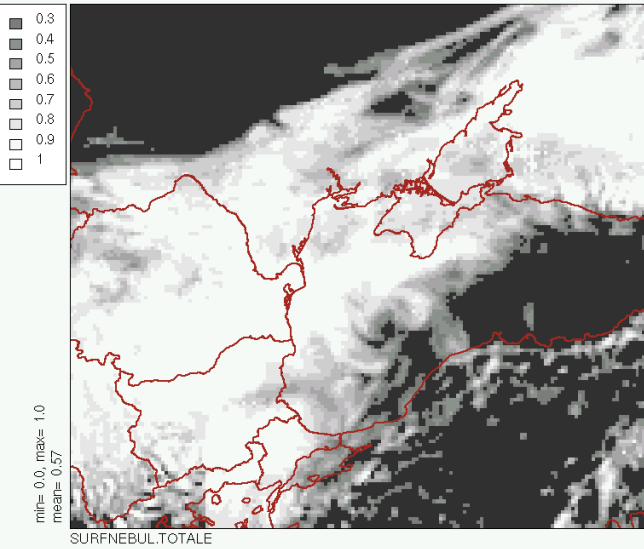




# Tropical Cyclone on Black Sea

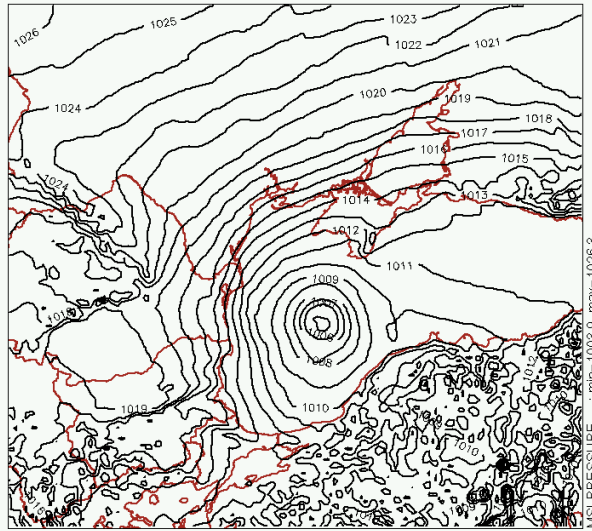
9 km

zC9h : 2003-09-12 00:00+36

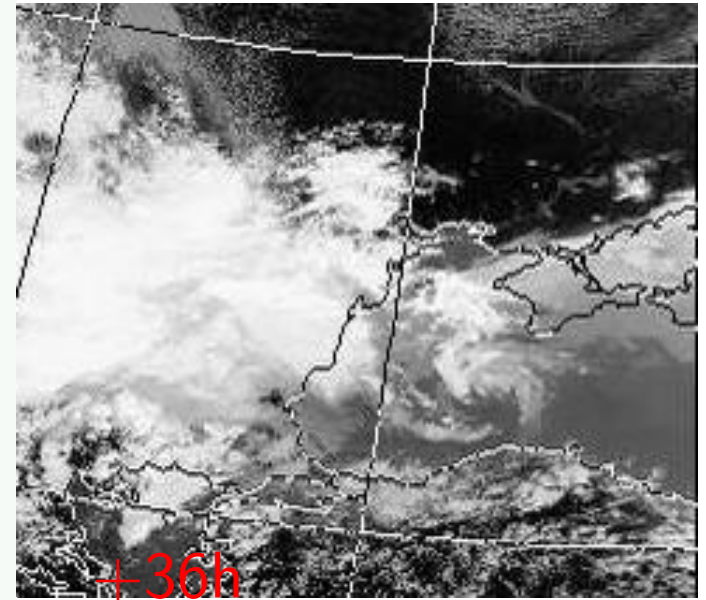


Alaro-0 Total Cloud

zC9h : 2003-09-12 00:00+36

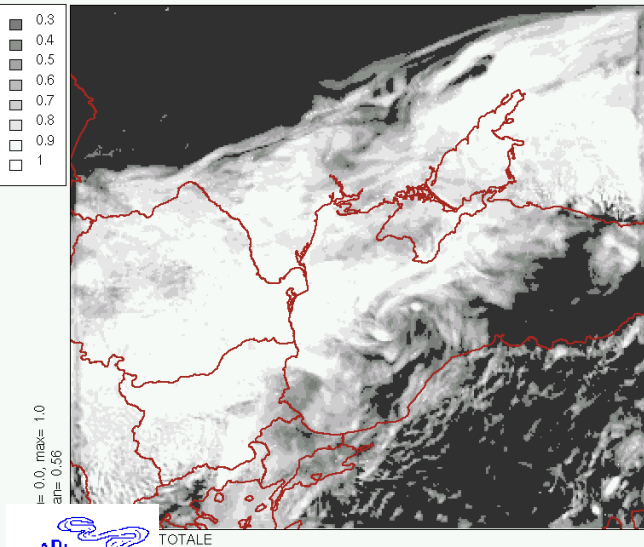


Alaro-0 msl pressure

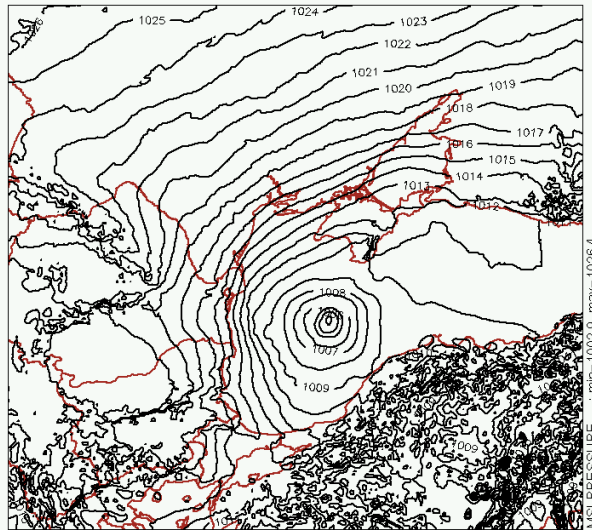


4km

zC4h : 2003-09-12 00:00+36



zC4h : 2003-09-12 00:00+36

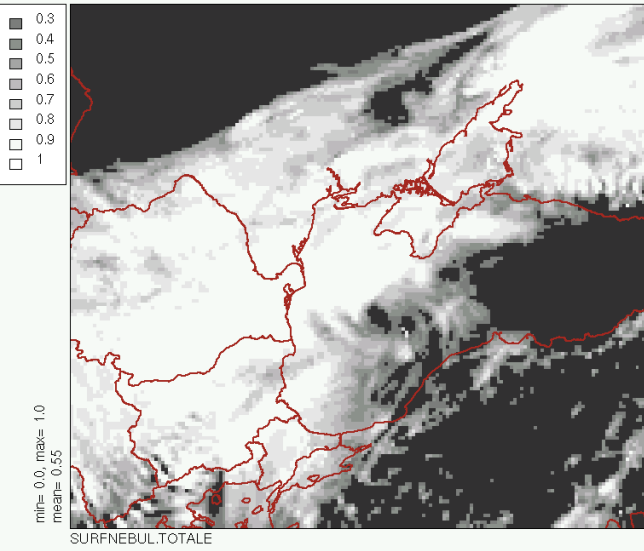




# Tropical Cyclone on Black Sea

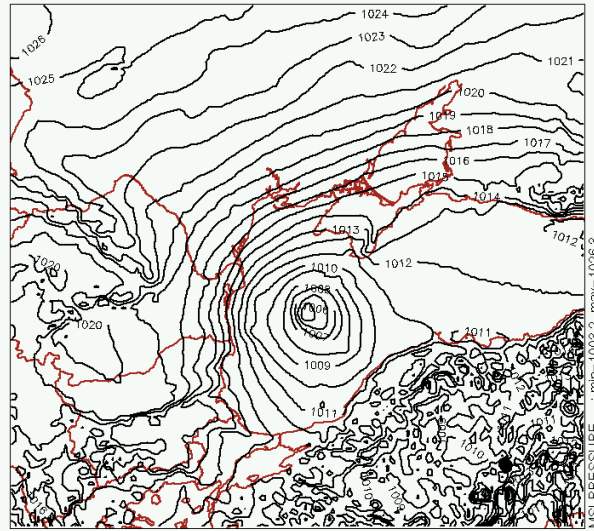
9 km

zC9h : 2003-09-12 00:00+39

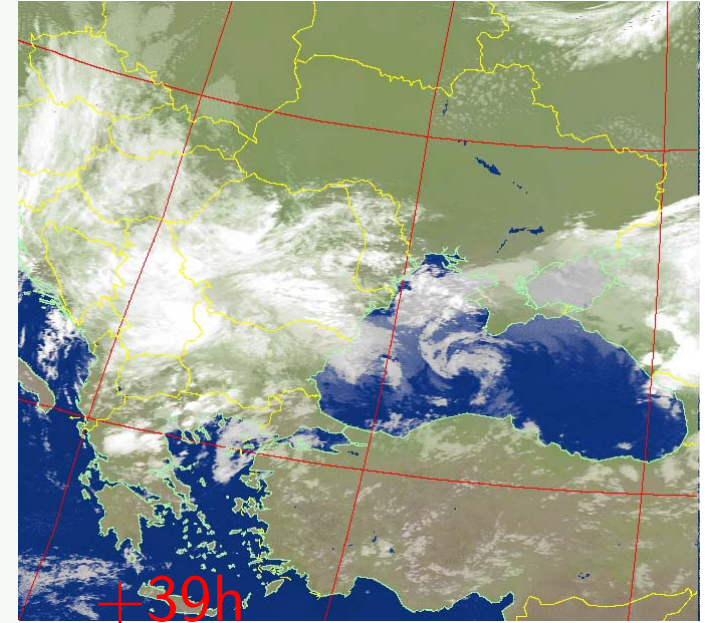


Alaro-0 Total Cloud

zC9h : 2003-09-12 00:00+39

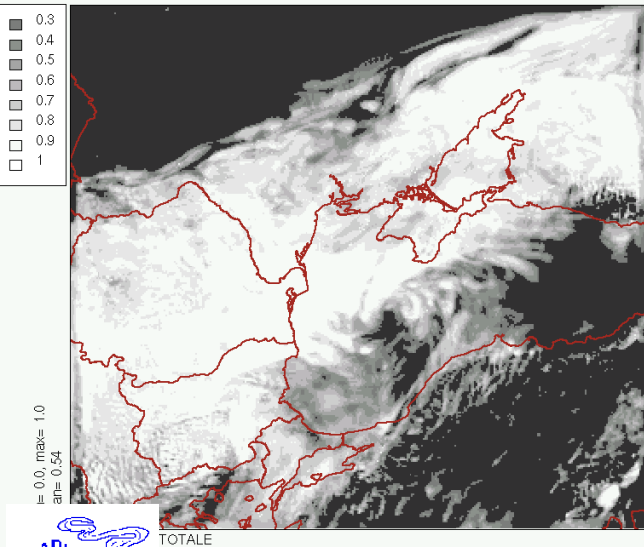


Alaro-0 msl pressure

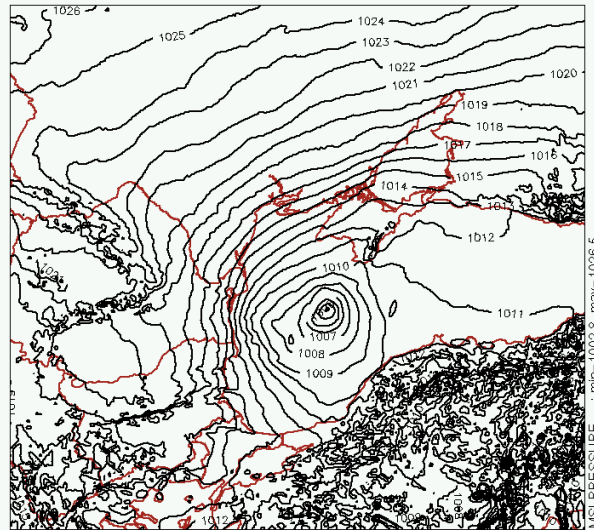


4km

zC4h : 2003-09-12 00:00+39



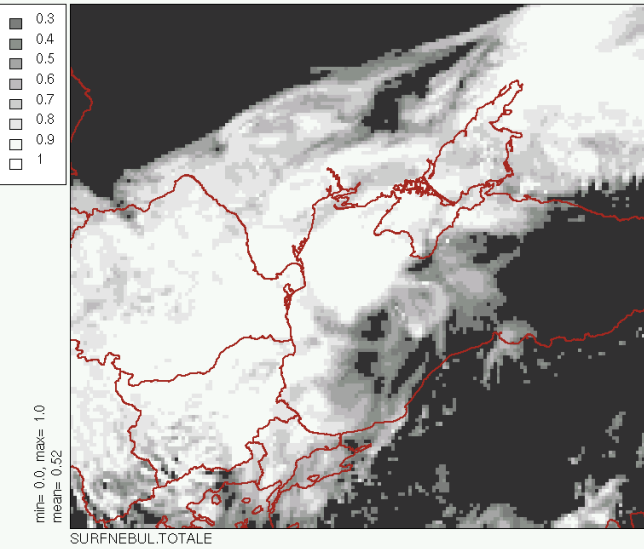
zC4h : 2003-09-12 00:00+39



# Tropical Cyclone on Black Sea

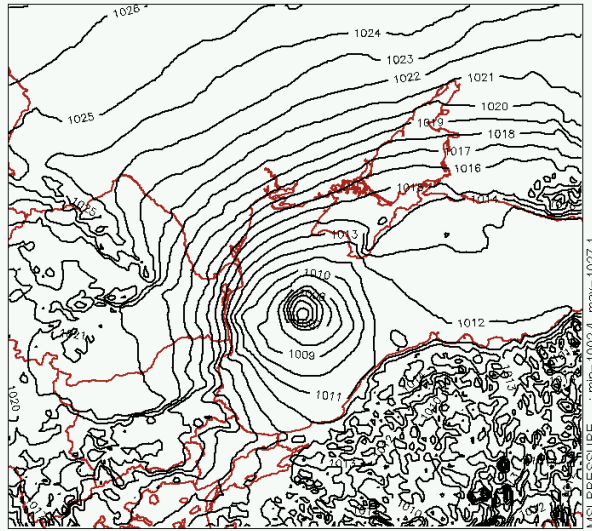
9 km

zC9h : 2003-09-12 00:00+41



Alaro-0 Total Cloud

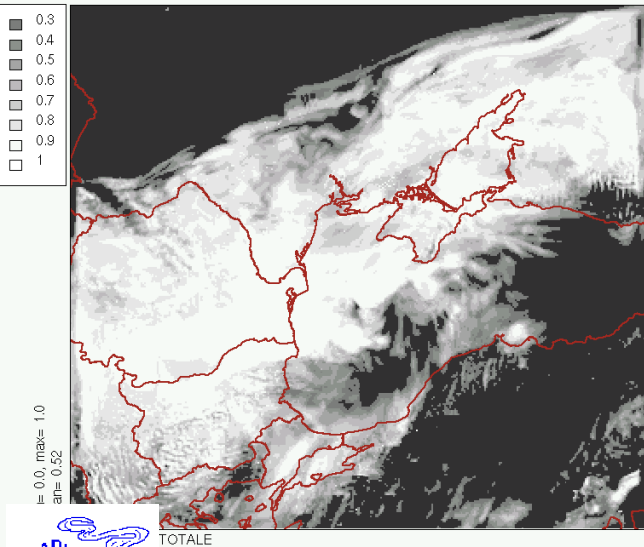
zC9h : 2003-09-12 00:00+41



Alaro-0 msl pressure

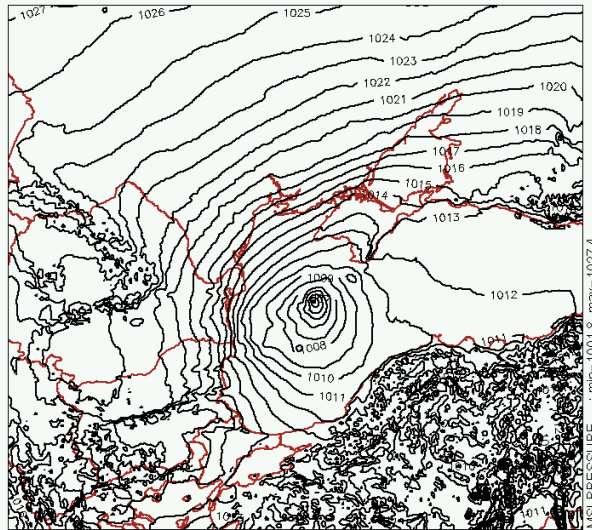
+41h

zC4h : 2003-09-12 00:00+41



4km

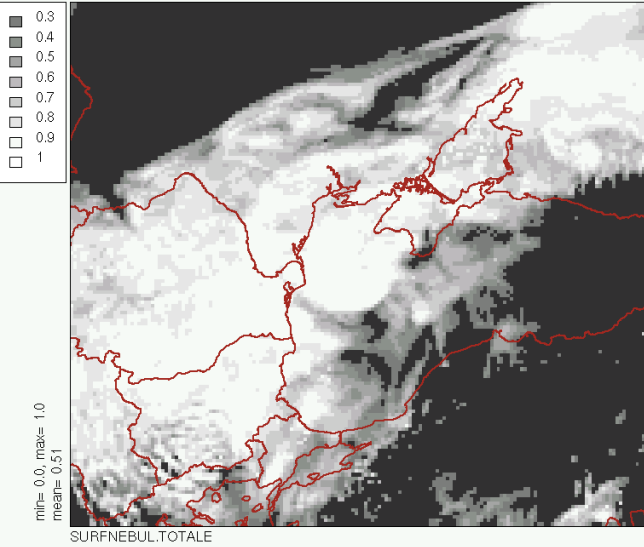
zC4h : 2003-09-12 00:00+41



# Tropical Cyclone on Black Sea

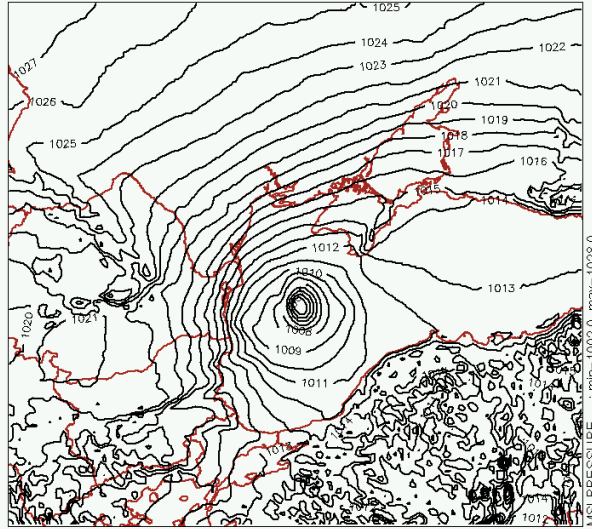
9 km

zC9h : 2003-09-12 00:00+42



Alaro-0 Total Cloud

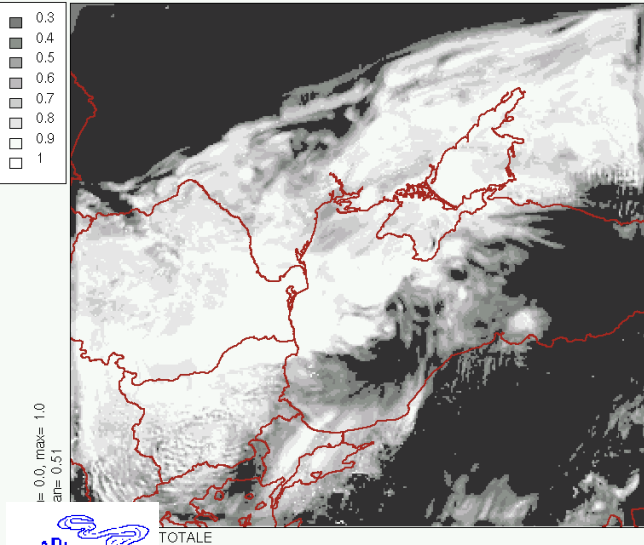
zC9h : 2003-09-12 00:00+42



Alaro-0 msl pressure

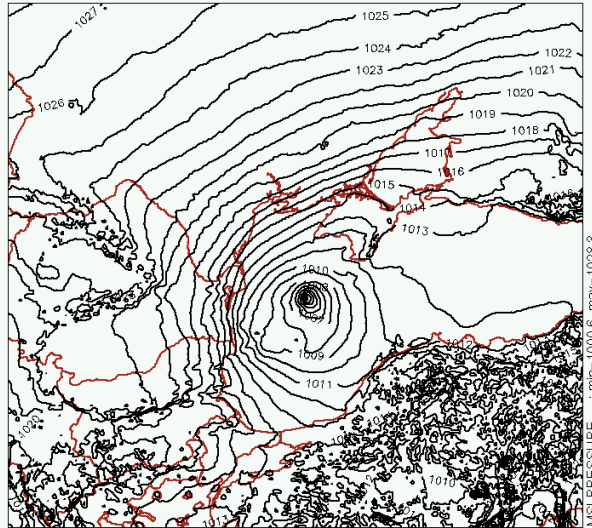
+42h

zC4h : 2003-09-12 00:00+42



4km

zC4h : 2003-09-12 00:00+42

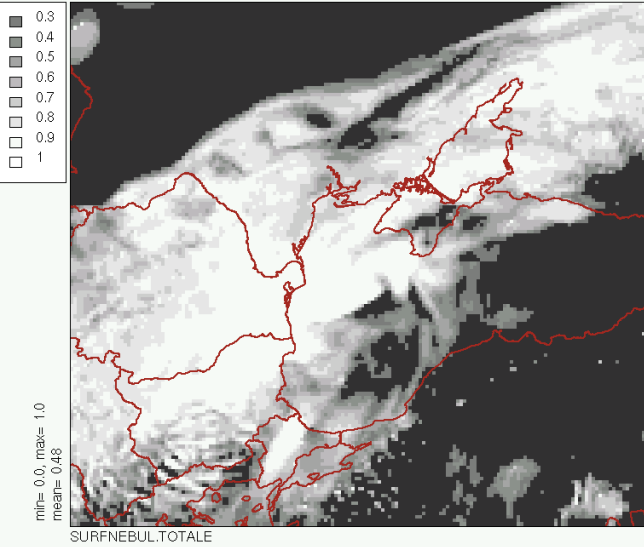




# Tropical Cyclone on Black Sea

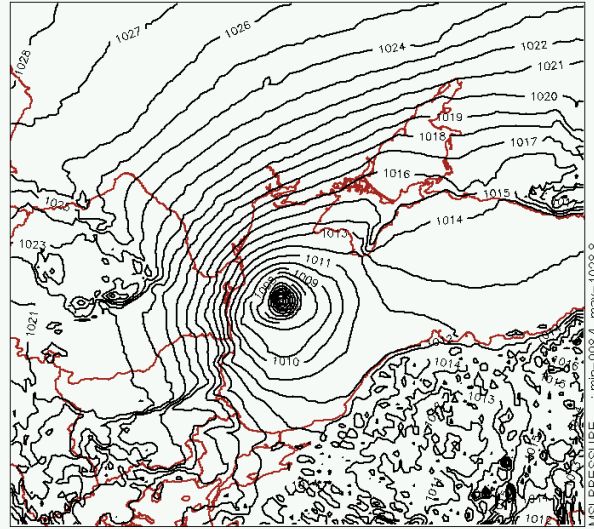
9 km

zC9h : 2003-09-12 00:00+45



Alaro-0 Total Cloud

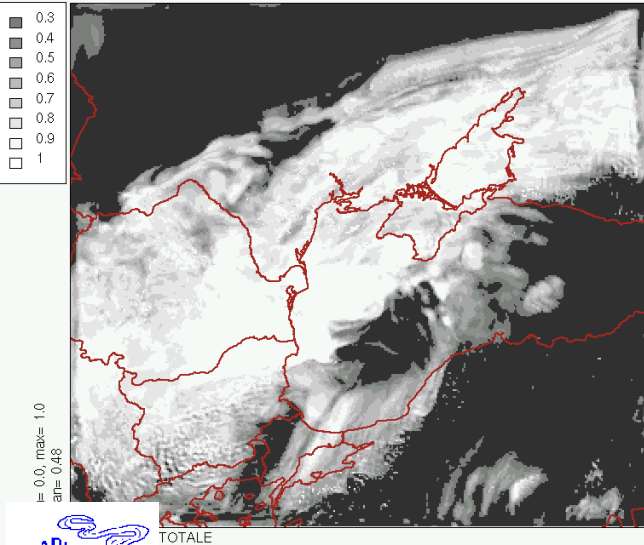
zC9h : 2003-09-12 00:00+45



Alaro-0 msl pressure

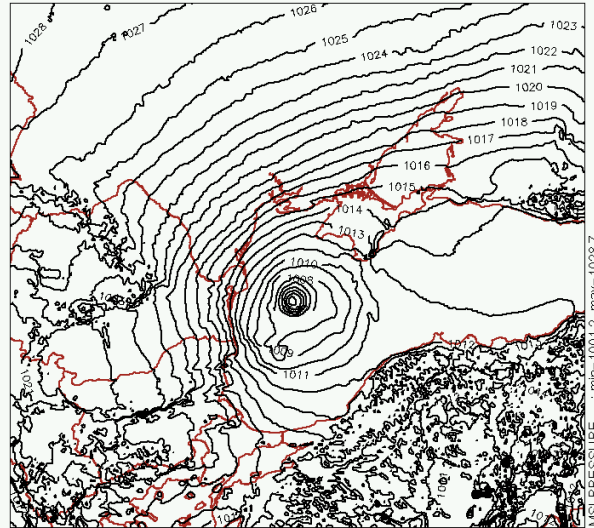
+45h

zC4h : 2003-09-12 00:00+45



4km

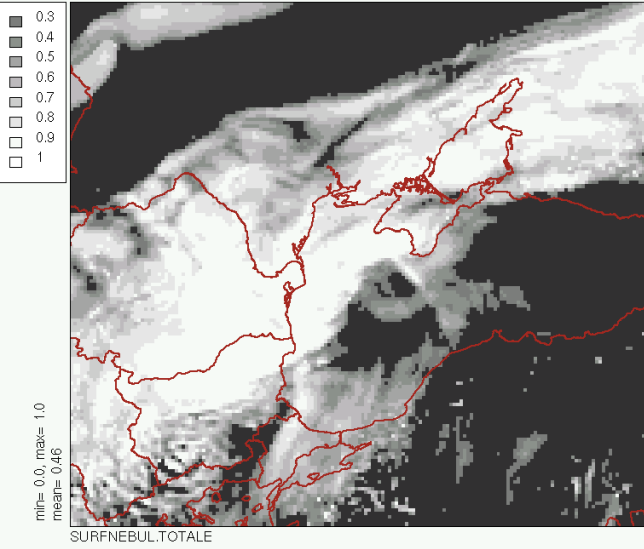
zC4h : 2003-09-12 00:00+45



# Tropical Cyclone on Black Sea

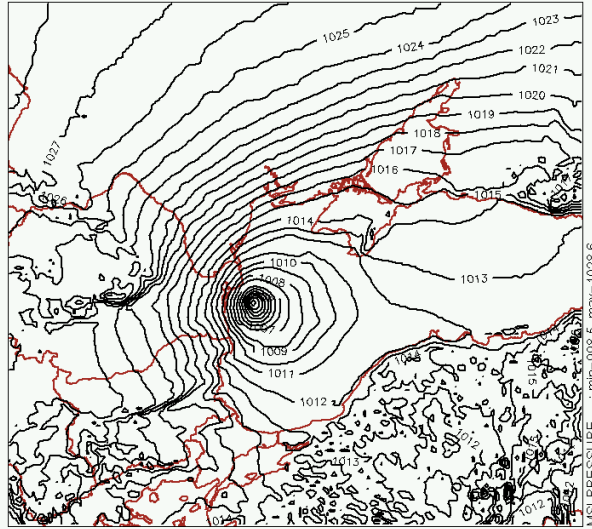
9 km

zC9h : 2003-09-12 00:00+48



Alaro-0 Total Cloud

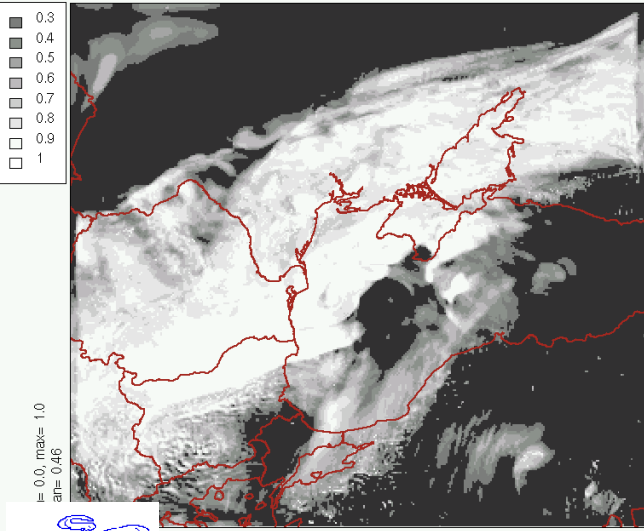
zC9h : 2003-09-12 00:00+48



Alaro-0 msl pressure

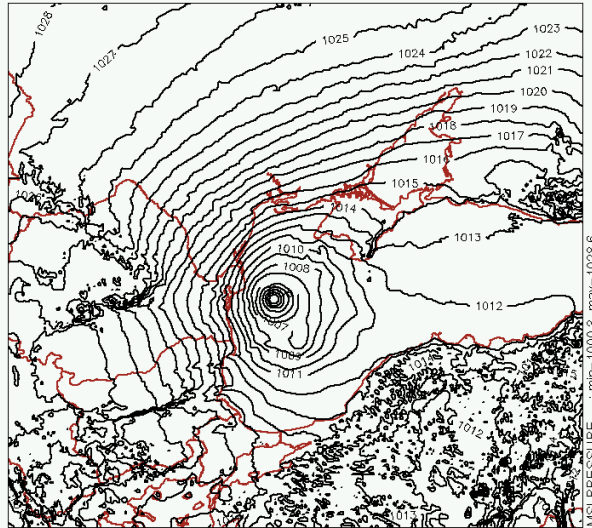
+48h

zC4h : 2003-09-12 00:00+48



4km

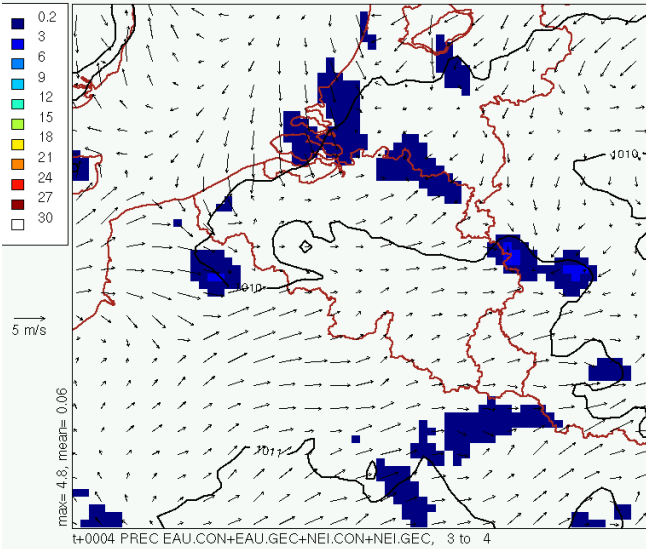
zC4h : 2003-09-12 00:00+48



# Thunderstorms on Saturday 10 September 2005

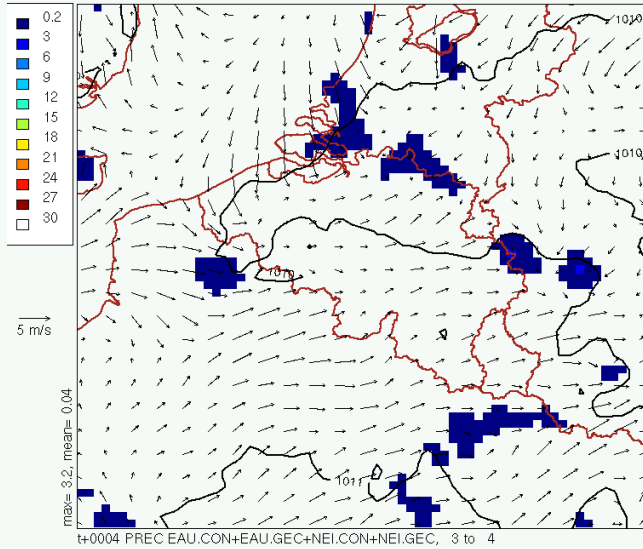
7 km

zA7h : 2005-09-10 12:00+04



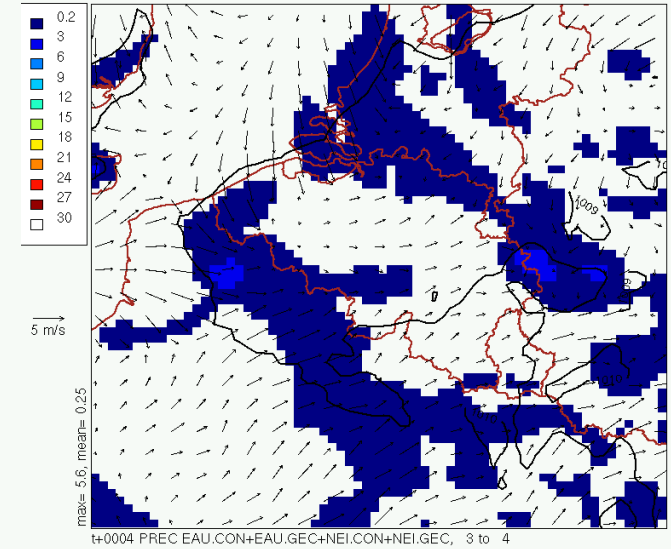
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+04



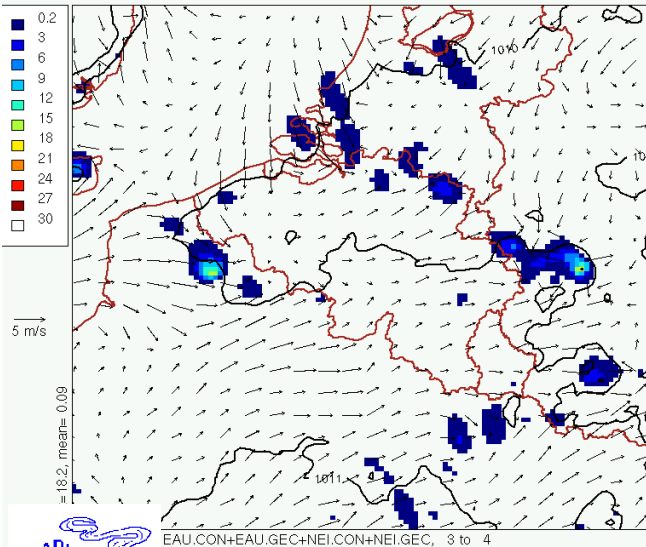
Alaro-0 LUDEN=T

cA7q : 2005-09-10 12:00+04



Aladin MaC

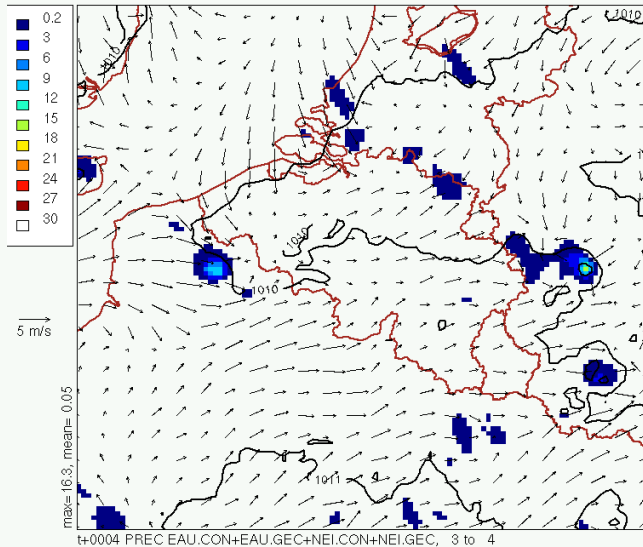
zA4h : 2005-09-10 12:00+04



t+0004 PREC EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 3 to 4

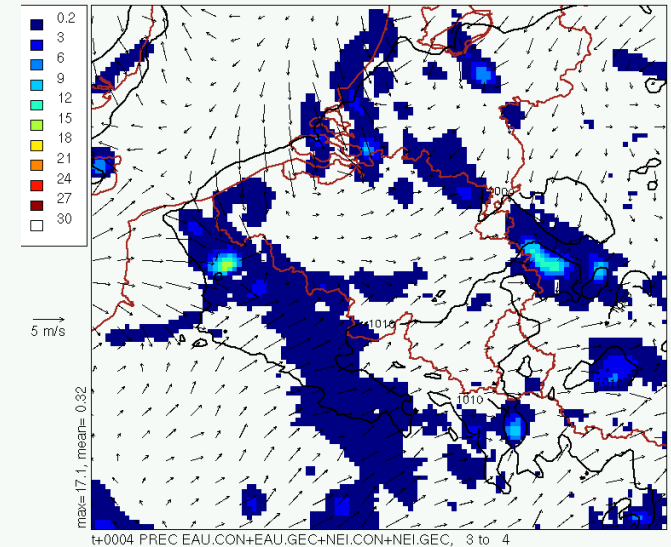


zA4i : 2005-09-10 12:00+04



t+0004 PREC EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 3 to 4

cA4q : 2005-09-10 12:00+04



t+0004 PREC EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 3 to 4

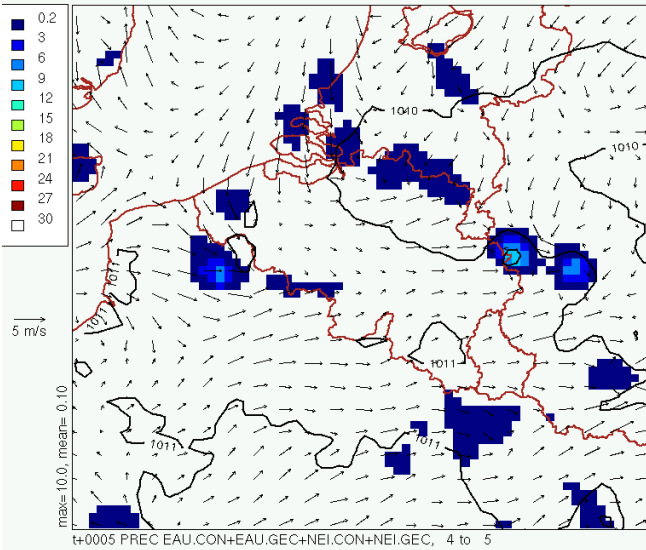
4 km



# Thunderstorms on Saturday 10 September 2005

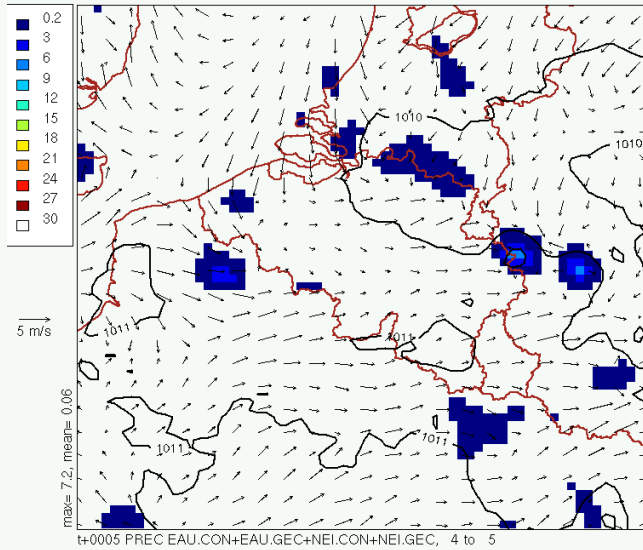
7 km

zA7h : 2005-09-10 12:00+05



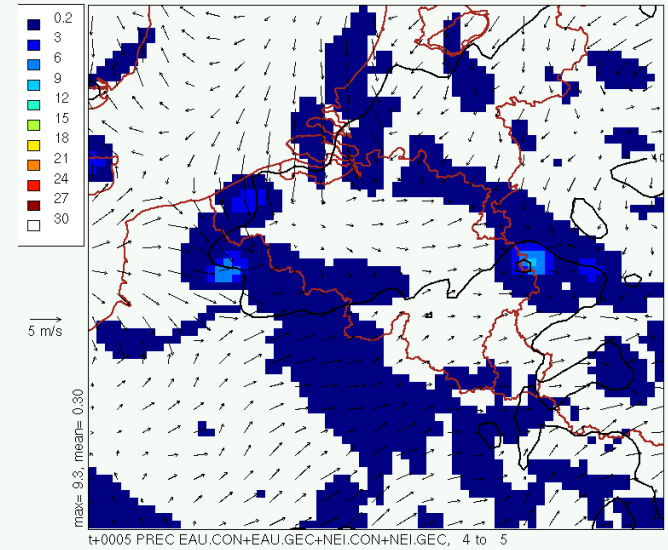
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+05



Alaro-0 LUDEN=T

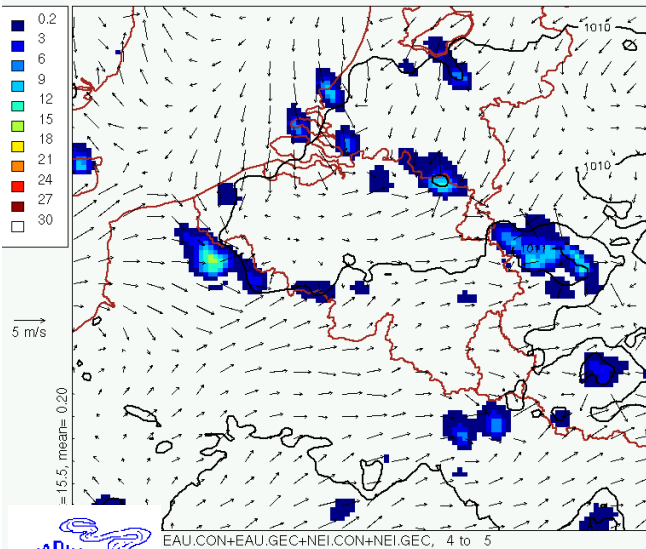
cA7q : 2005-09-10 12:00+05



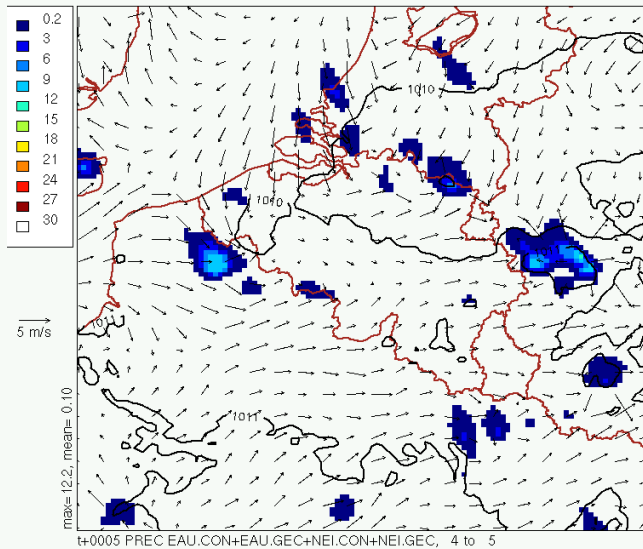
Aladin MaC

4 km

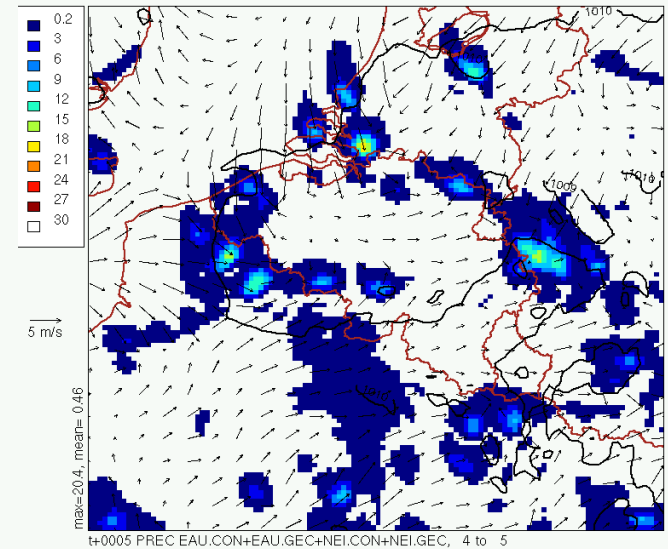
zA4h : 2005-09-10 12:00+05



zA4i : 2005-09-10 12:00+05



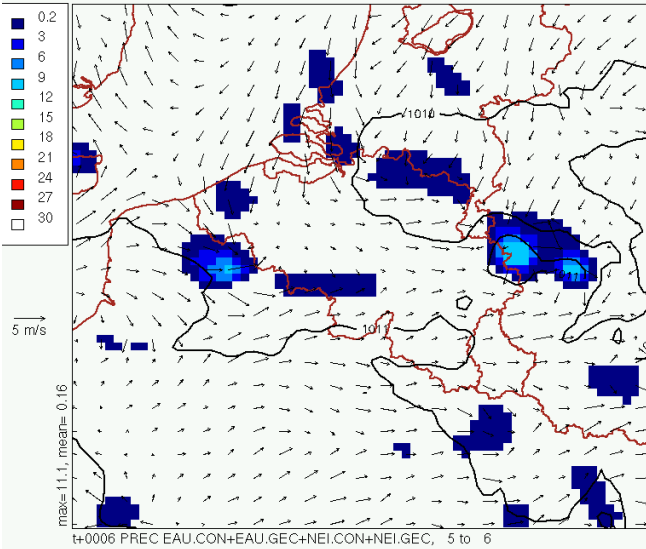
cA4q : 2005-09-10 12:00+05



# Thunderstorms on Saturday 10 September 2005

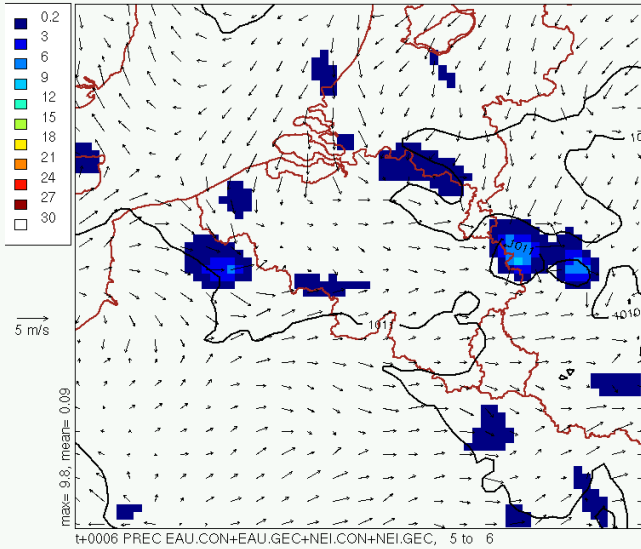
7 km

zA7h : 2005-09-10 12:00+06



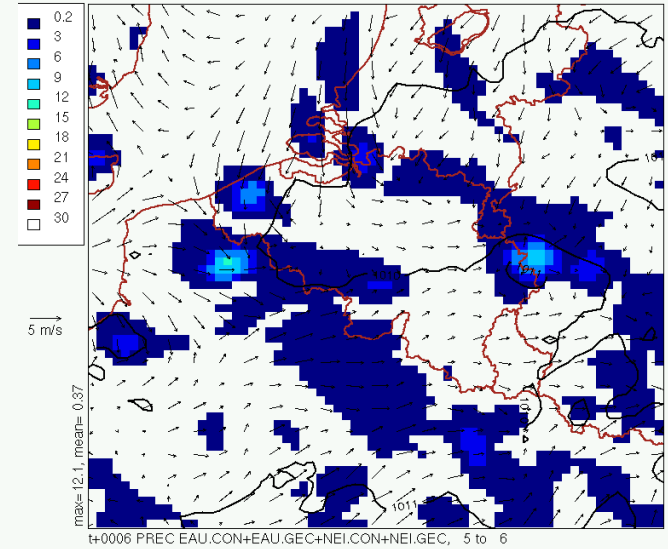
Alaro-0 LU DEN=F

zA7i : 2005-09-10 12:00+06



Alaro-0 LU DEN=T

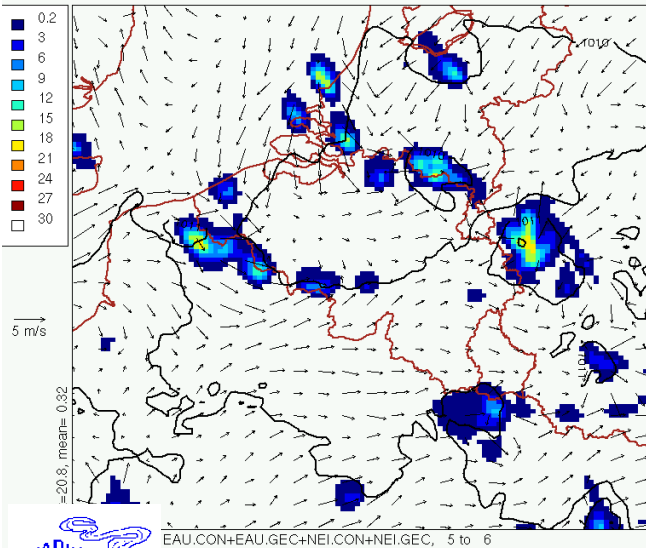
cA7q : 2005-09-10 12:00+06



Aladin MaC

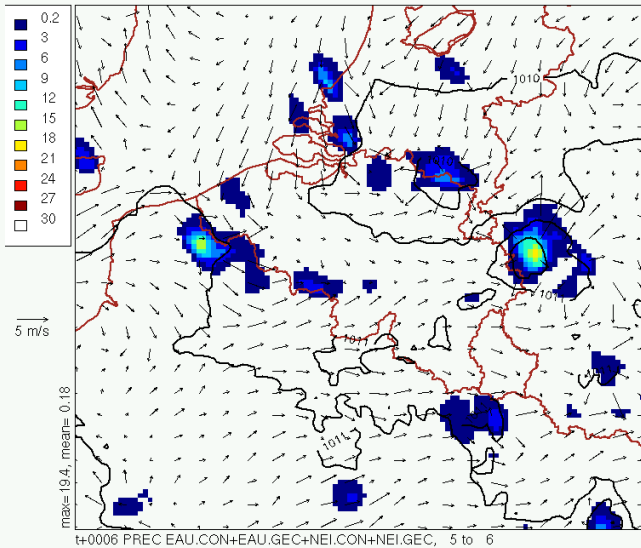
4 km

zA4h : 2005-09-10 12:00+06



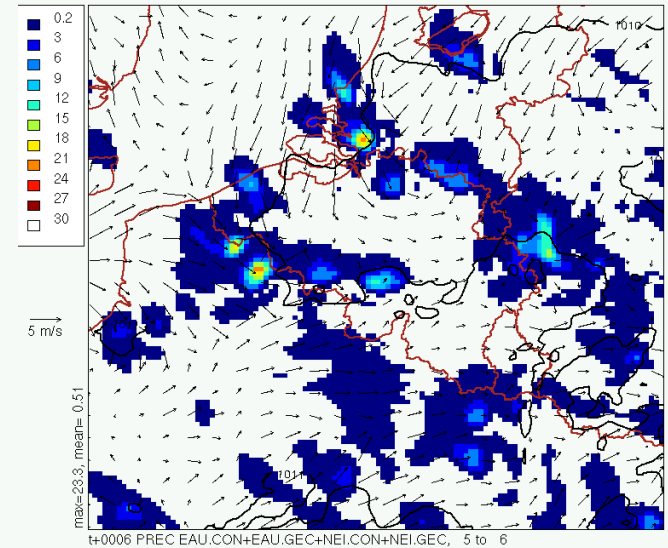
EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 5 to 6

zA4i : 2005-09-10 12:00+06



EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 5 to 6

cA4q : 2005-09-10 12:00+06

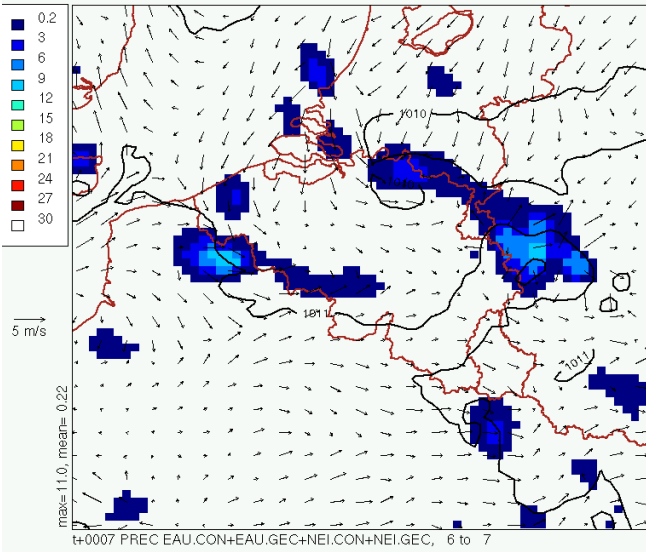


EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 5 to 6

# Thunderstorms on Saturday 10 September 2005

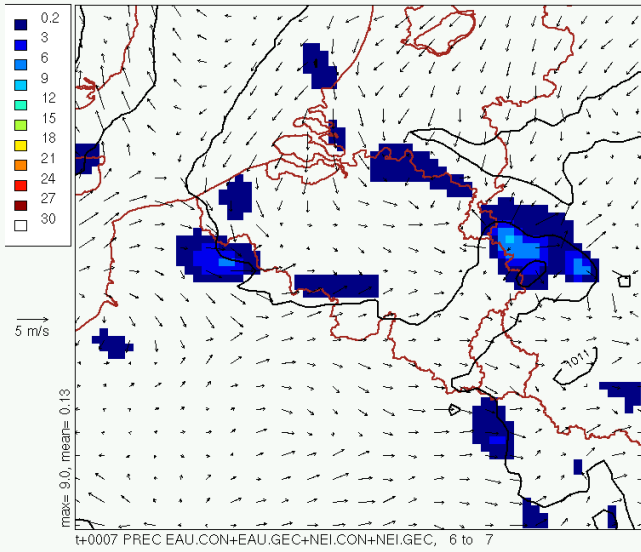
7 km

zA7h : 2005-09-10 12:00+07



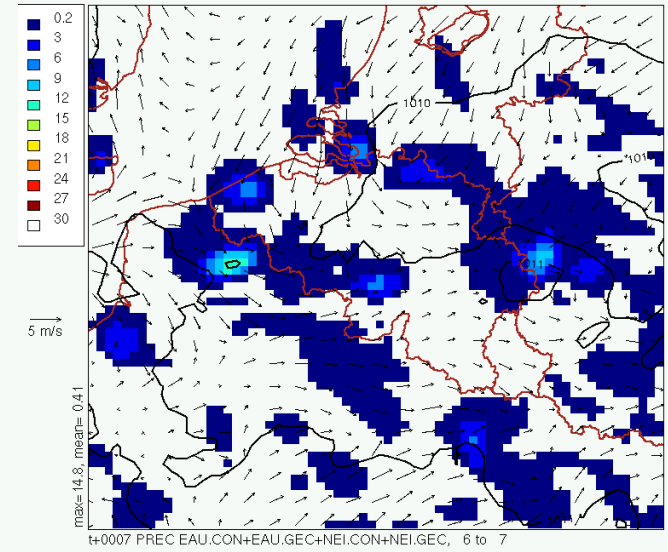
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+07



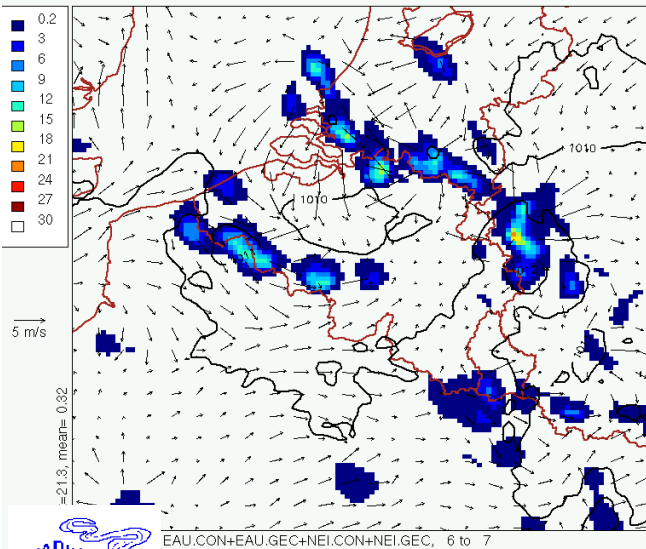
Alaro-0 LUDEN=T

cA7q : 2005-09-10 12:00+07



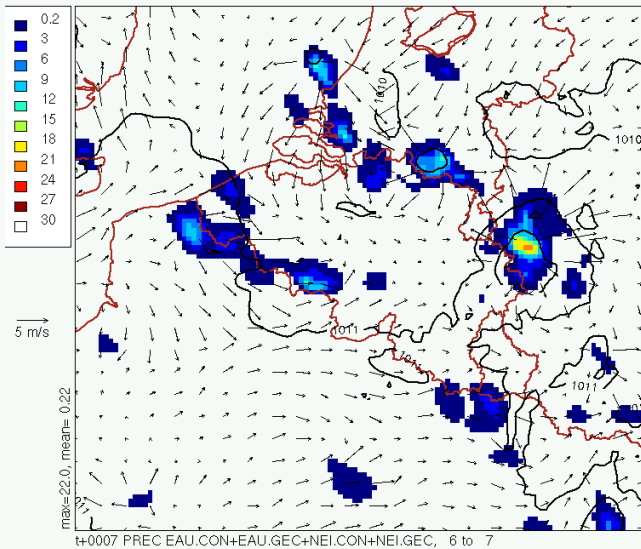
Aladin MaC

zA4h : 2005-09-10 12:00+07

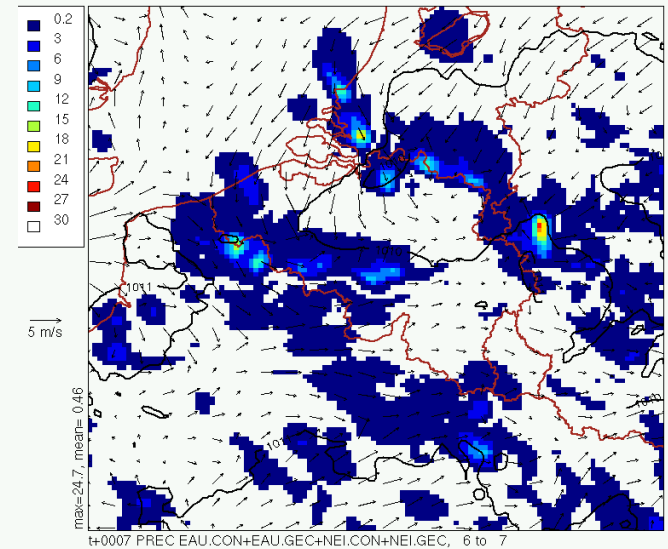


4 km

zA4i : 2005-09-10 12:00+07



cA4q : 2005-09-10 12:00+07

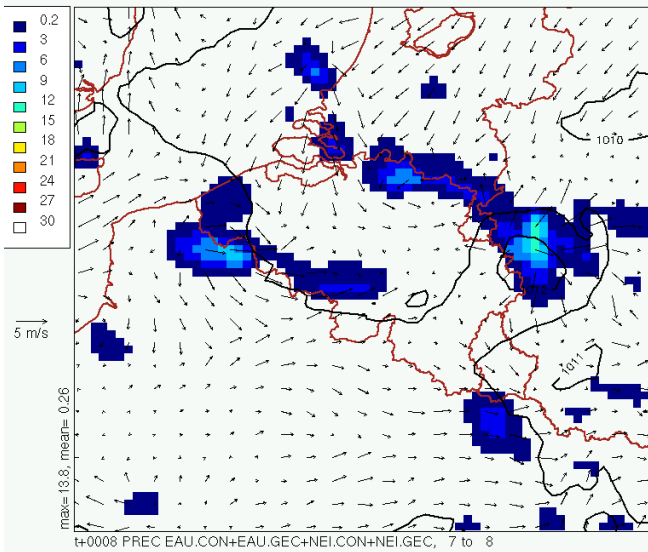




# Thunderstorms on Saturday 10 September 2005

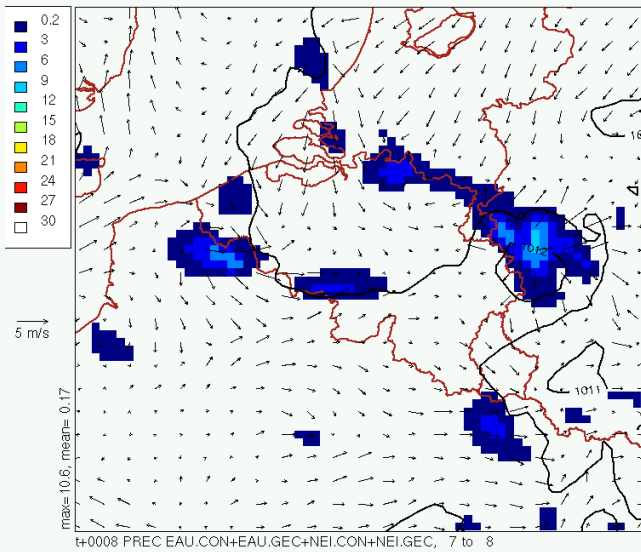
7 km

zA7h : 2005-09-10 12:00+08



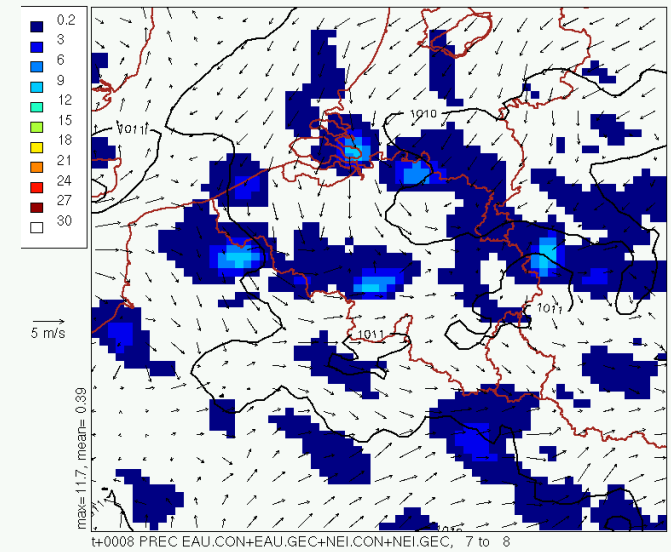
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+08



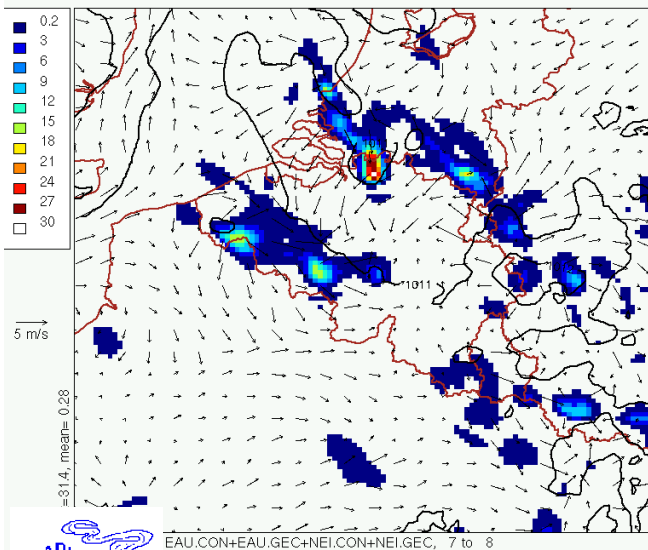
Alaro-0 LUDEN=T

cA7q : 2005-09-10 12:00+08



Aladin MaC

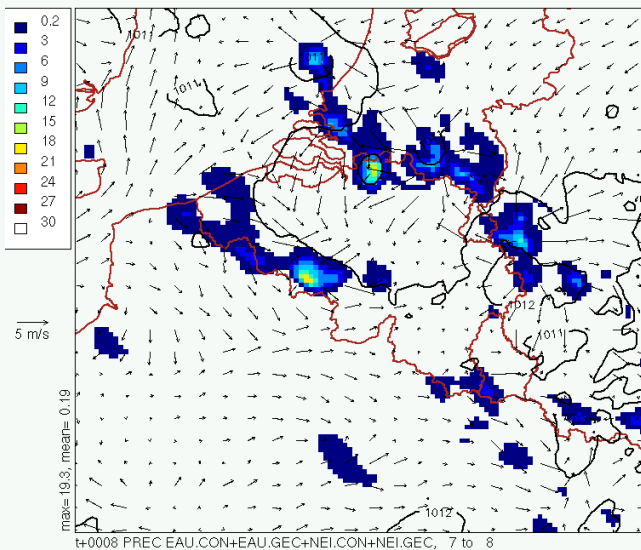
zA4h : 2005-09-10 12:00+08



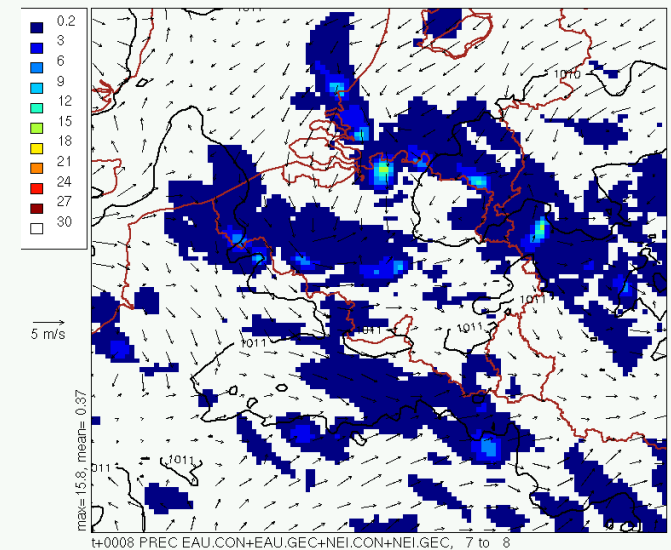
4 km



zA4i : 2005-09-10 12:00+08



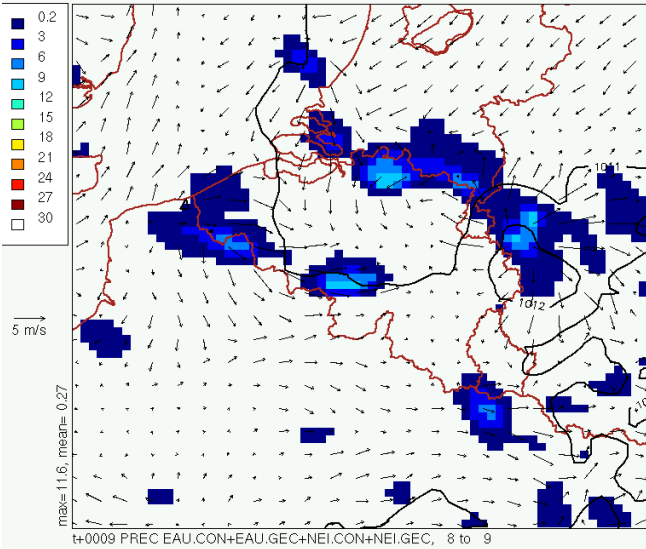
cA4q : 2005-09-10 12:00+08



# Thunderstorms on Saturday 10 September 2005

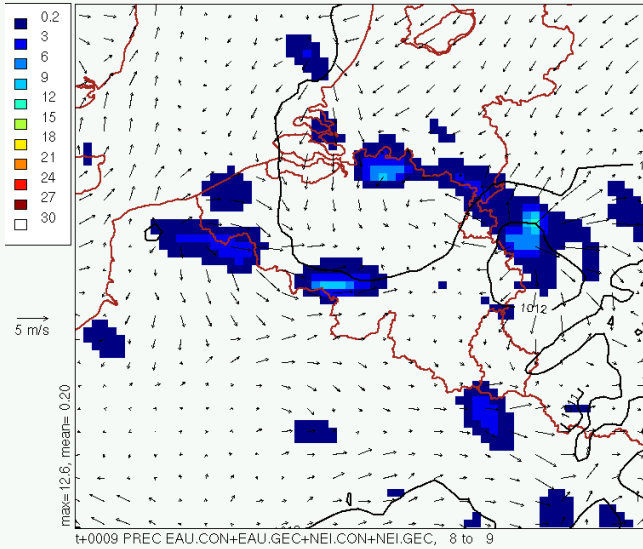
7 km

zA7h : 2005-09-10 12:00+09



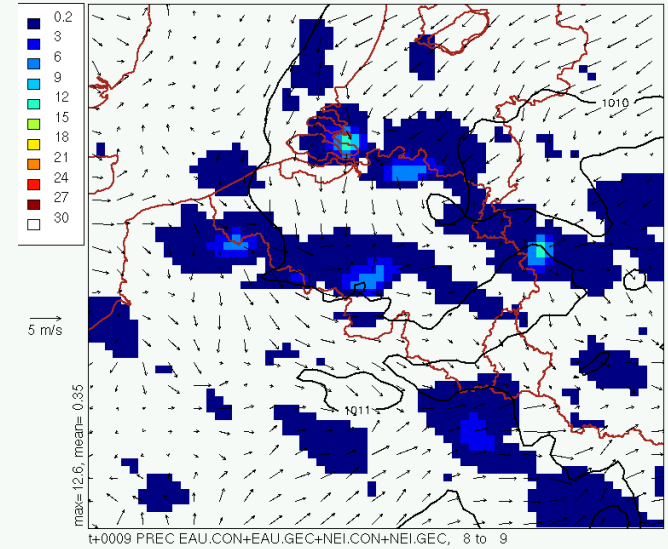
Alaro-0 LU DEN=F

zA7i : 2005-09-10 12:00+09



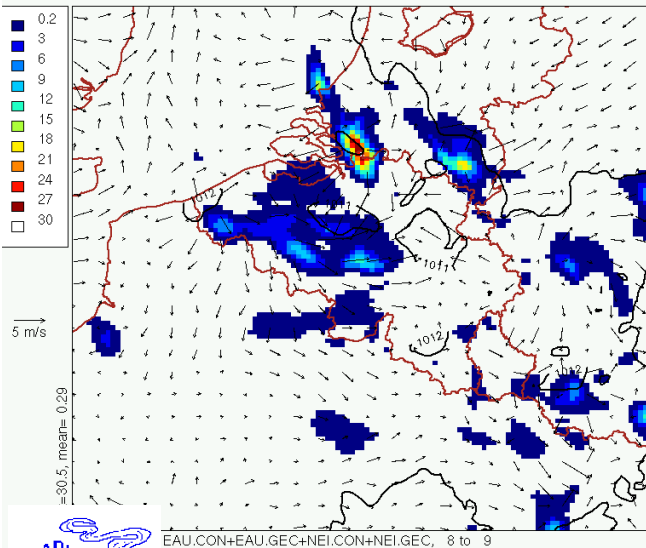
Alaro-0 LU DEN=T

cA7q : 2005-09-10 12:00+09



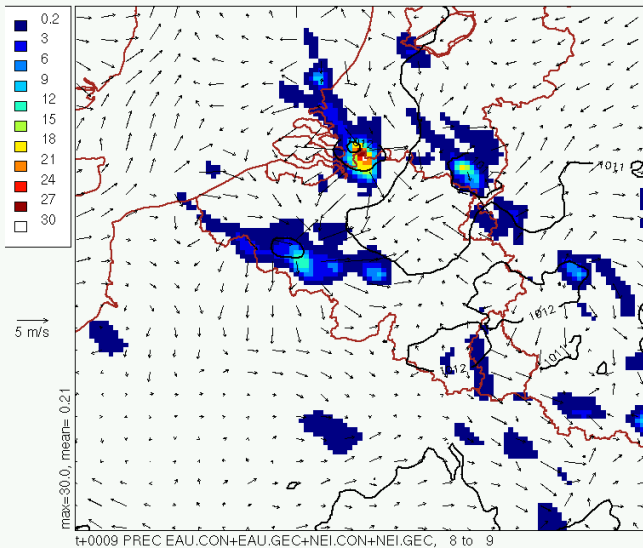
Aladin MaC

zA4h : 2005-09-10 12:00+09

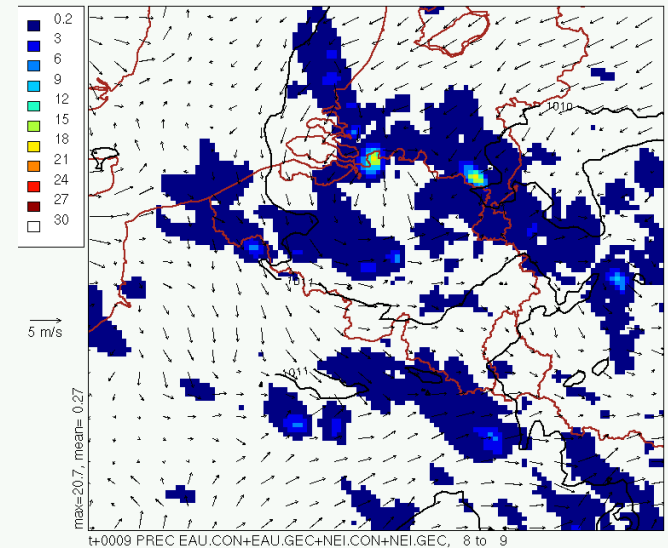


4 km

zA4i : 2005-09-10 12:00+09



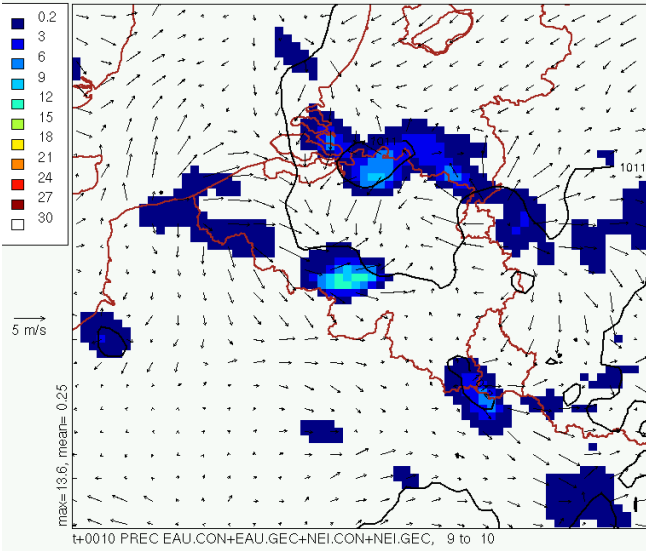
cA4q : 2005-09-10 12:00+09



# Thunderstorms on Saturday 10 September 2005

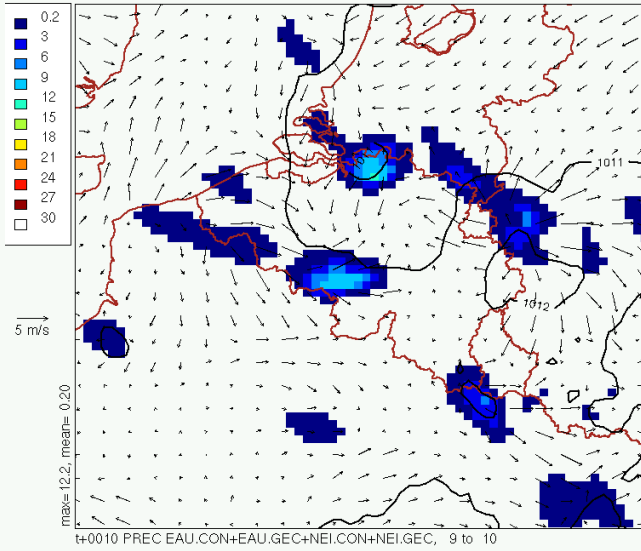
7 km

zA7h : 2005-09-10 12:00+10



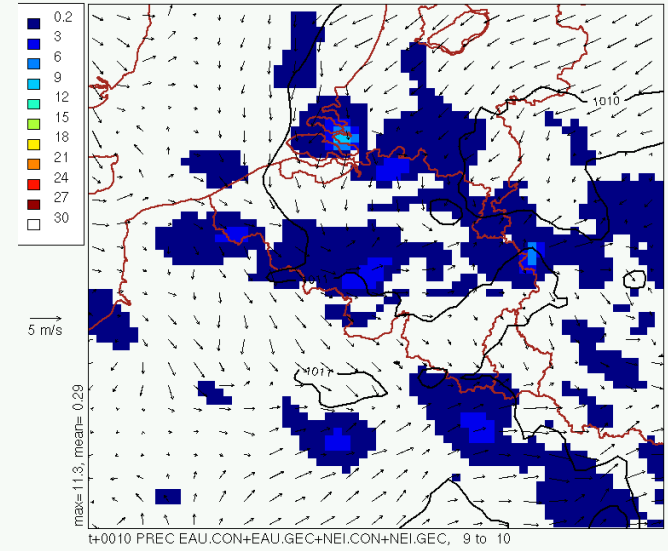
Alaro-0 LU DEN=F

zA7i : 2005-09-10 12:00+10



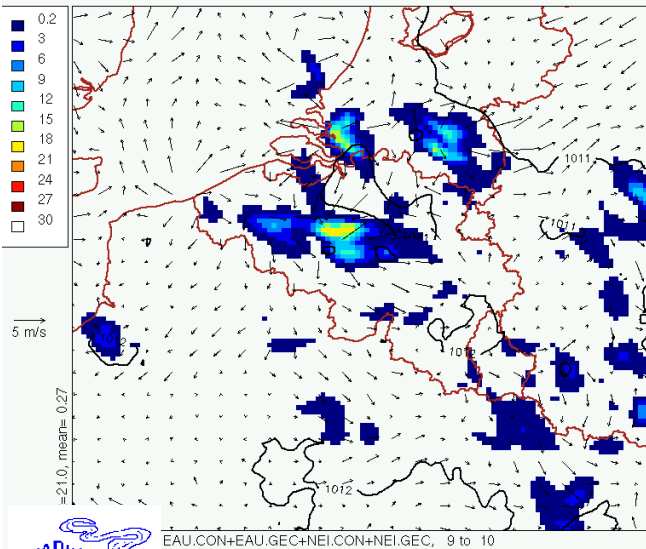
Alaro-0 LU DEN=T

cA7q : 2005-09-10 12:00+10



Aladin MaC

zA4h : 2005-09-10 12:00+10

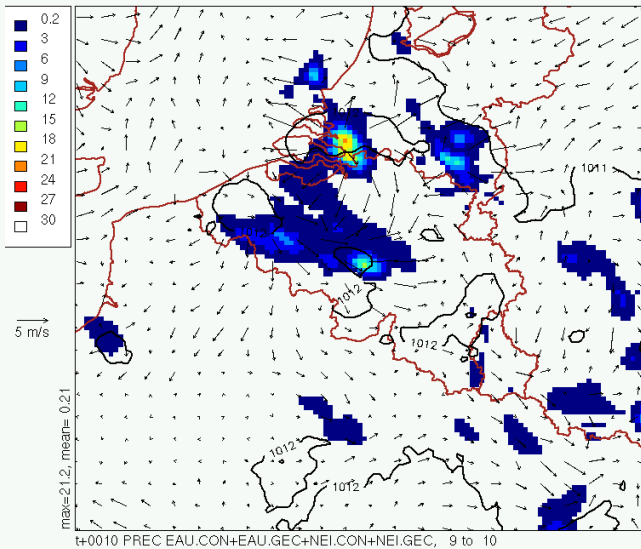


4 km



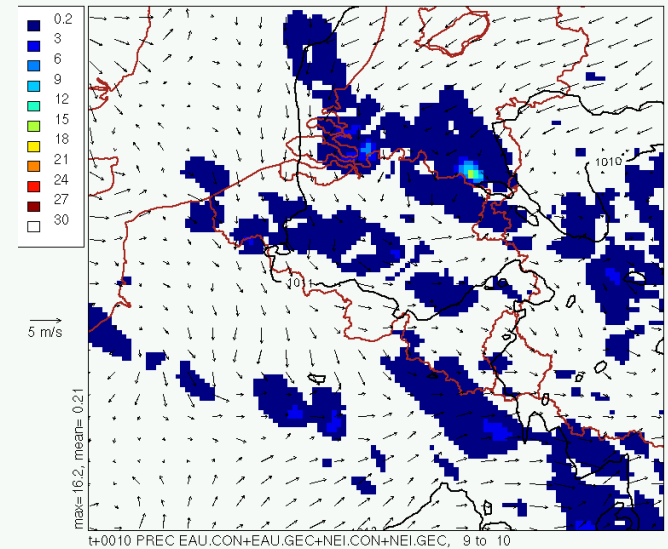
EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 9 to 10

zA4i : 2005-09-10 12:00+10



EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 9 to 10

cA4q : 2005-09-10 12:00+10



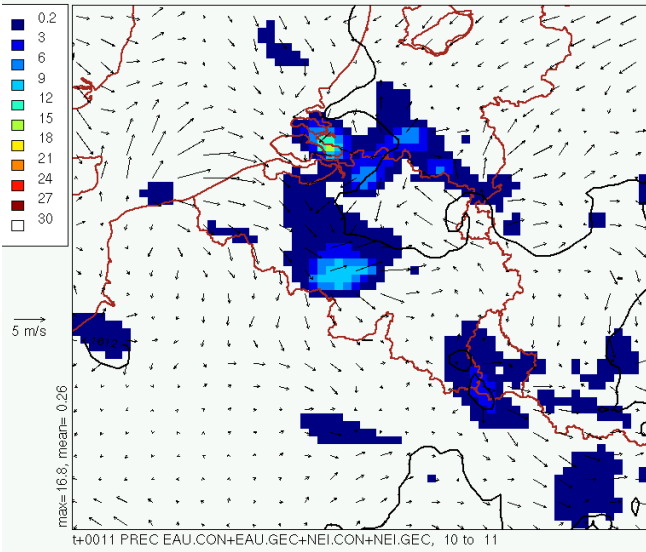
EAU.CON+EAU.GEC+NEI.CON+NEI.GEC, 9 to 10



# Thunderstorms on Saturday 10 September 2005

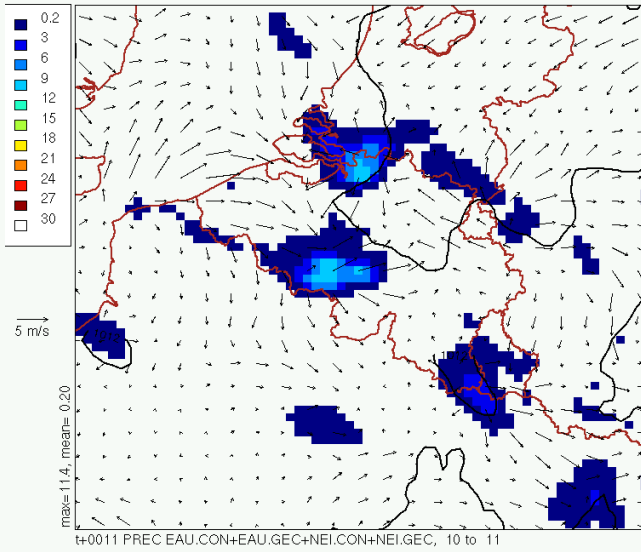
7 km

zA7h : 2005-09-10 12:00+11



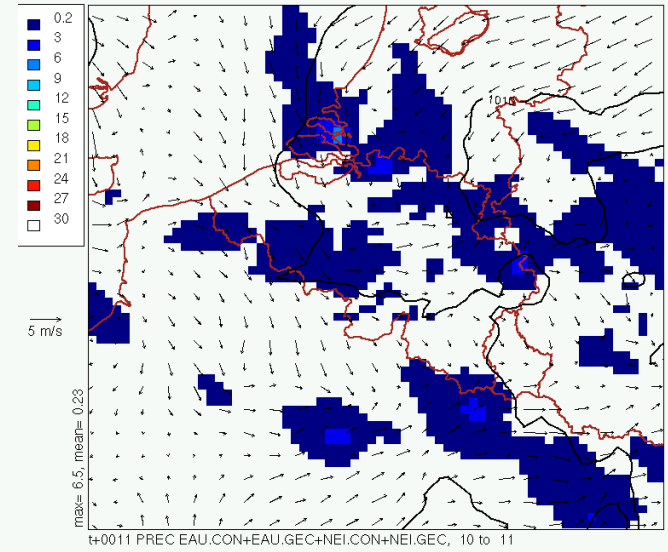
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+11



Alaro-0 LUDEN=T

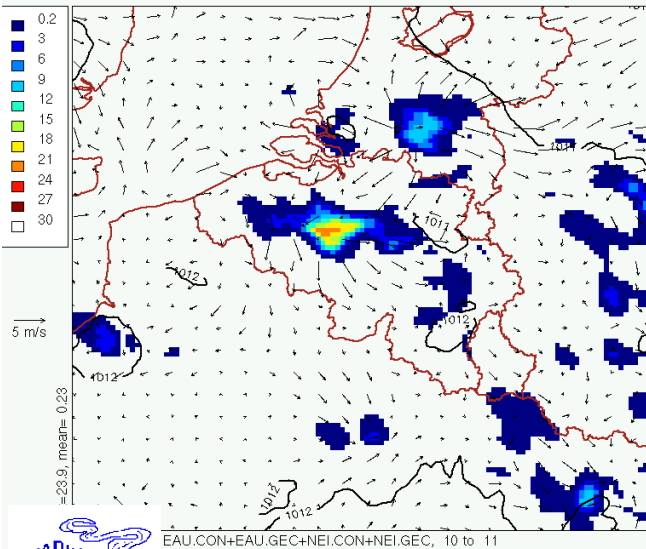
cA7q : 2005-09-10 12:00+11



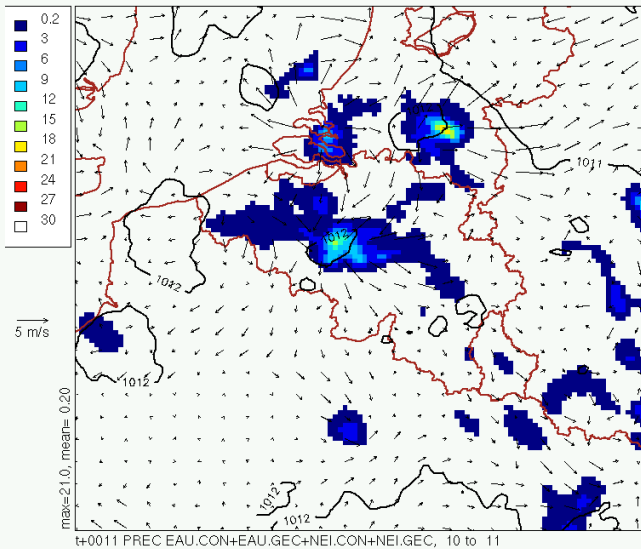
Aladin MaC

4 km

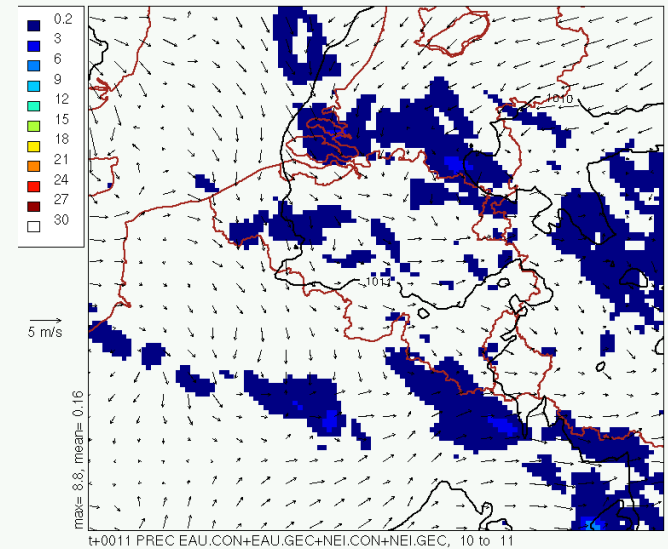
zA4h : 2005-09-10 12:00+11



zA4i : 2005-09-10 12:00+11



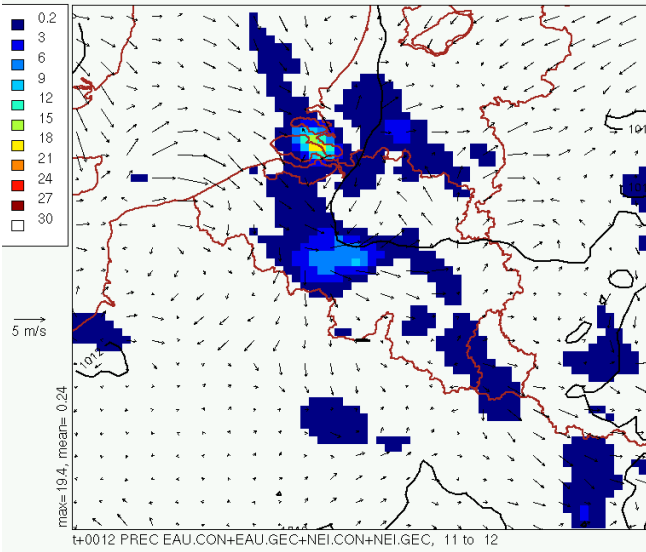
cA4q : 2005-09-10 12:00+11



# Thunderstorms on Saturday 10 September 2005

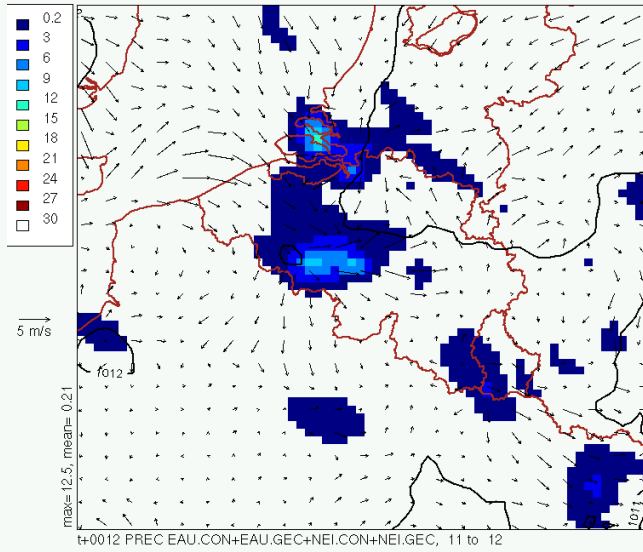
7 km

zA7h : 2005-09-10 12:00+12



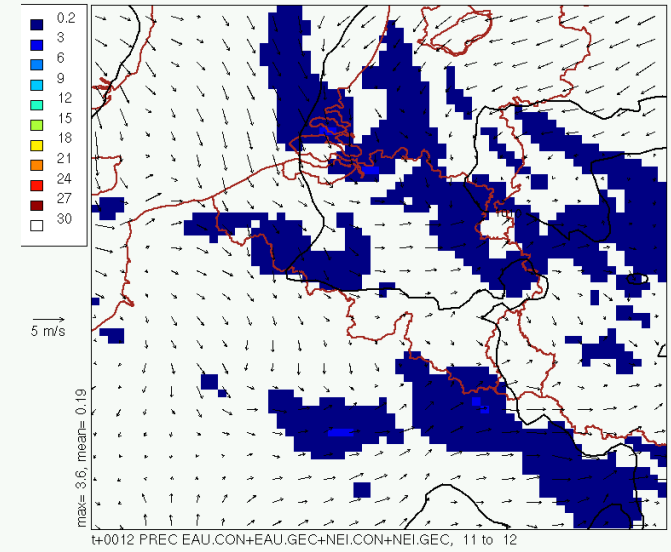
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+12



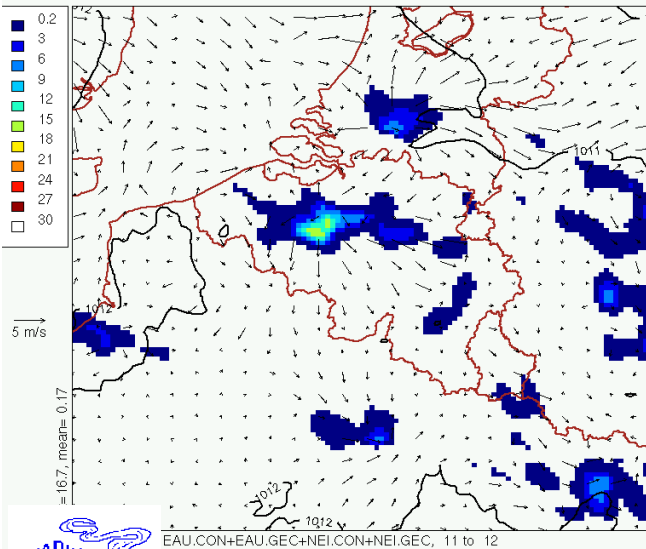
Alaro-0 LUDEN=T

cA7q : 2005-09-10 12:00+12



Aladin MaC

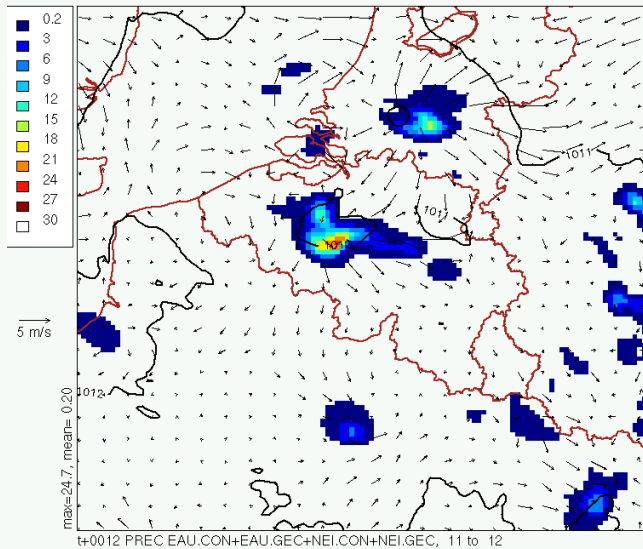
zA4h : 2005-09-10 12:00+12



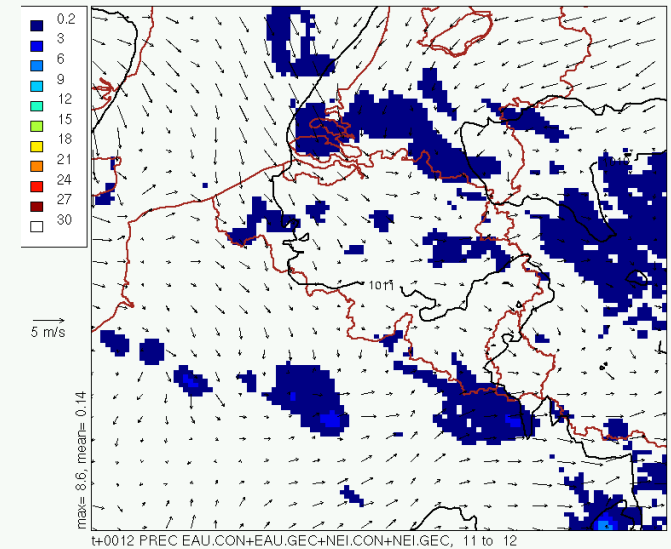
4 km



zA4i : 2005-09-10 12:00+12



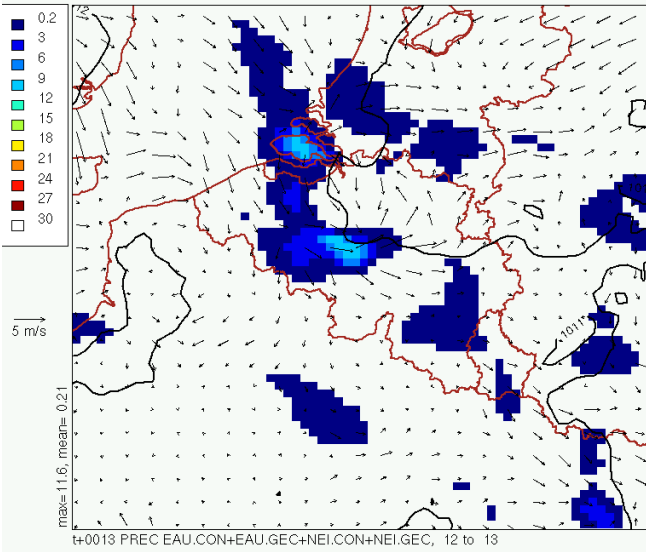
cA4q : 2005-09-10 12:00+12



# Thunderstorms on Saturday 10 September 2005

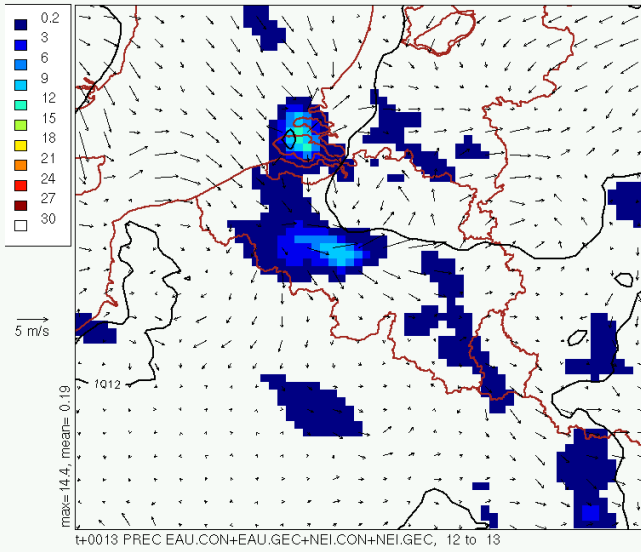
7 km

zA7h : 2005-09-10 12:00+13



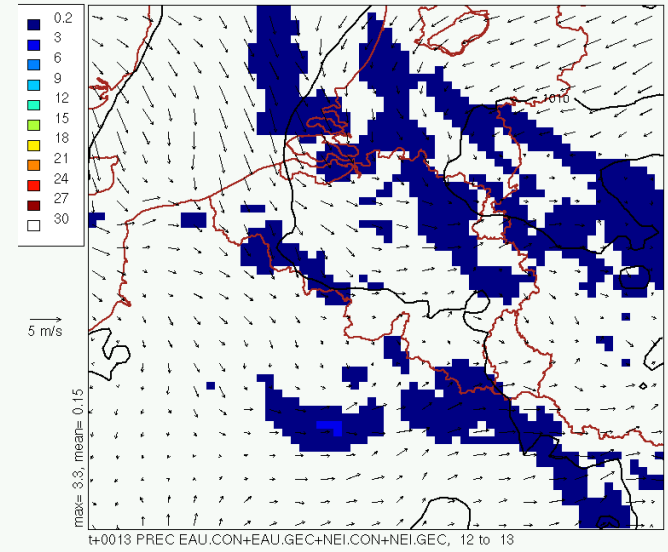
Alaro-0 LU DEN=F

zA7i : 2005-09-10 12:00+13



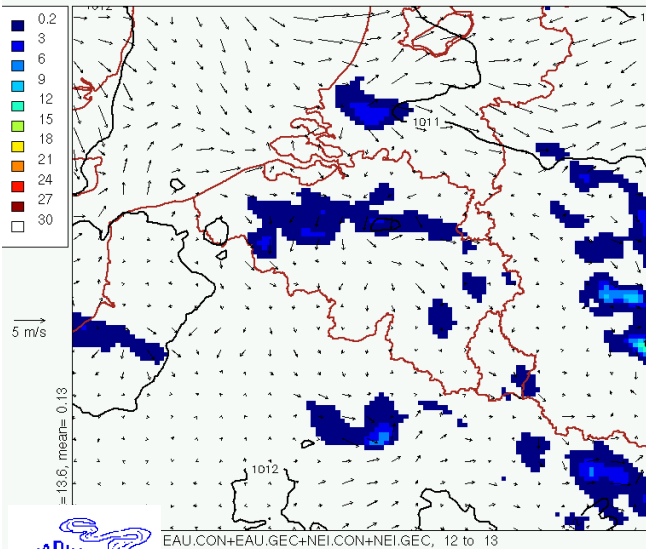
Alaro-0 LU DEN=T

cA7q : 2005-09-10 12:00+13



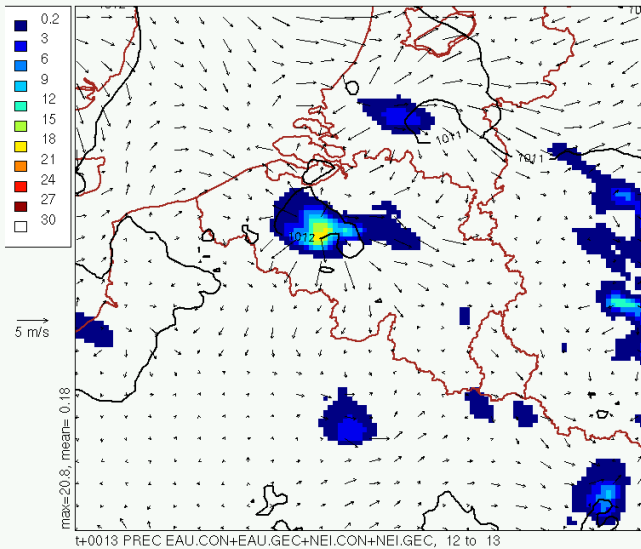
Aladin MaC

zA4h : 2005-09-10 12:00+13

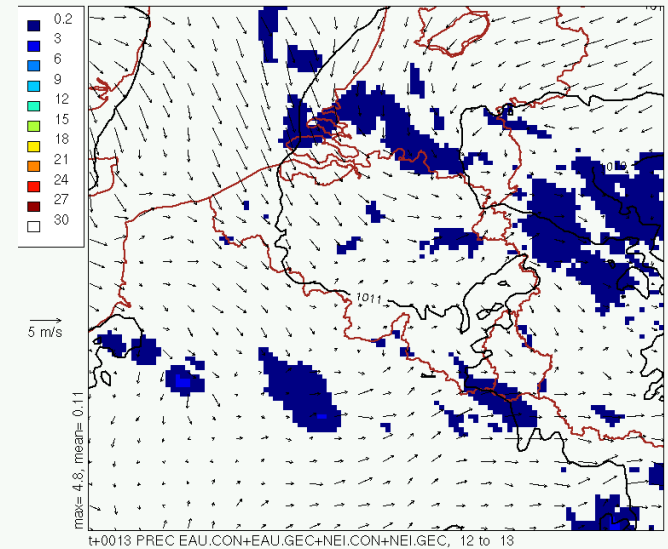


4 km

zA4i : 2005-09-10 12:00+13



cA4q : 2005-09-10 12:00+13

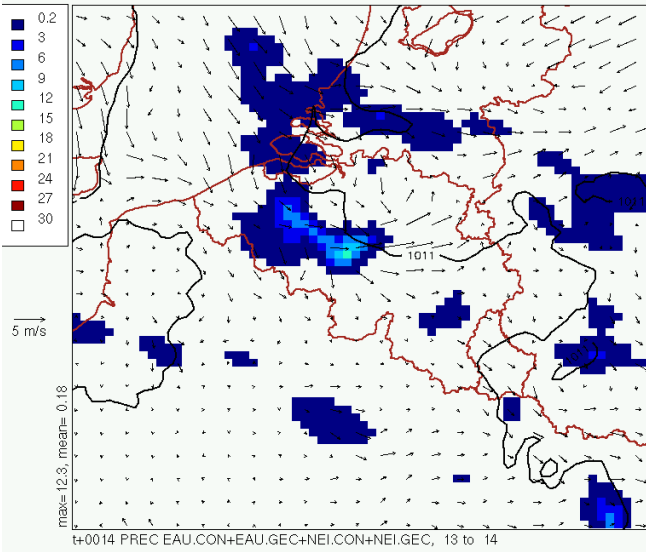




# Thunderstorms on Saturday 10 September 2005

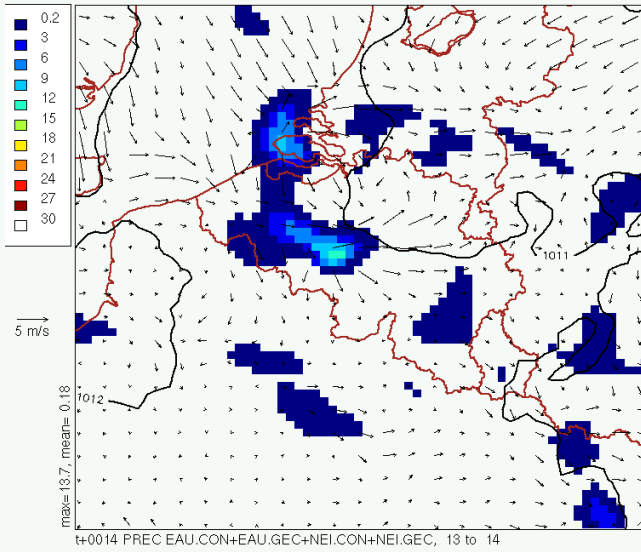
7 km

zA7h : 2005-09-10 12:00+14



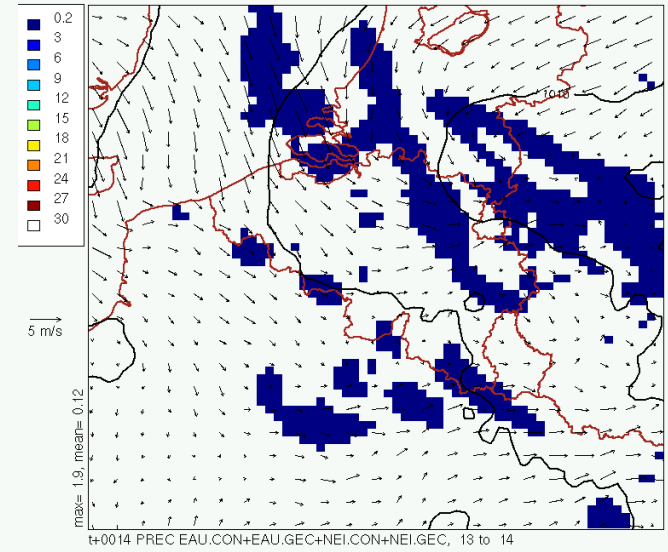
Alaro-0 LUDEN=F

zA7i : 2005-09-10 12:00+14



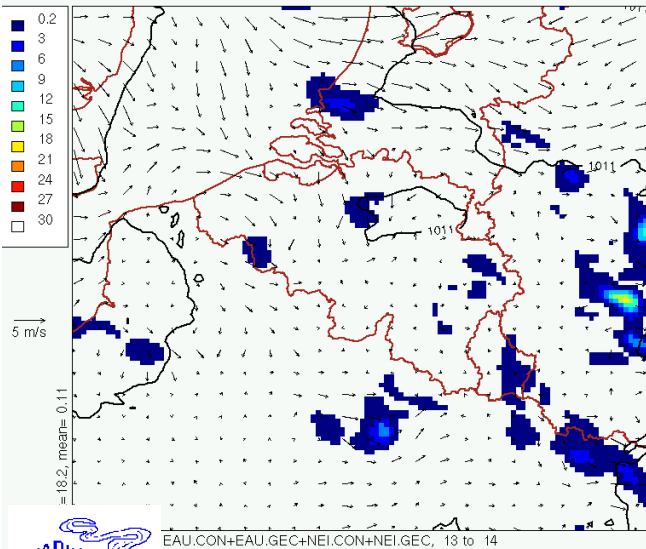
Alaro-0 LUDEN=T

cA7q : 2005-09-10 12:00+14



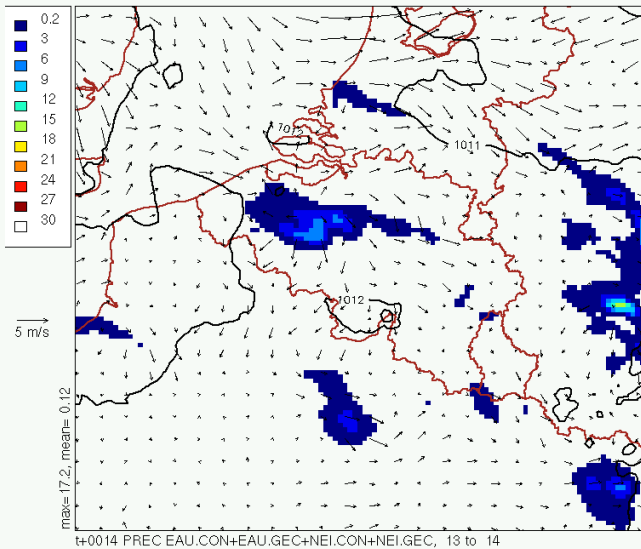
Aladin MaC

zA4h : 2005-09-10 12:00+14

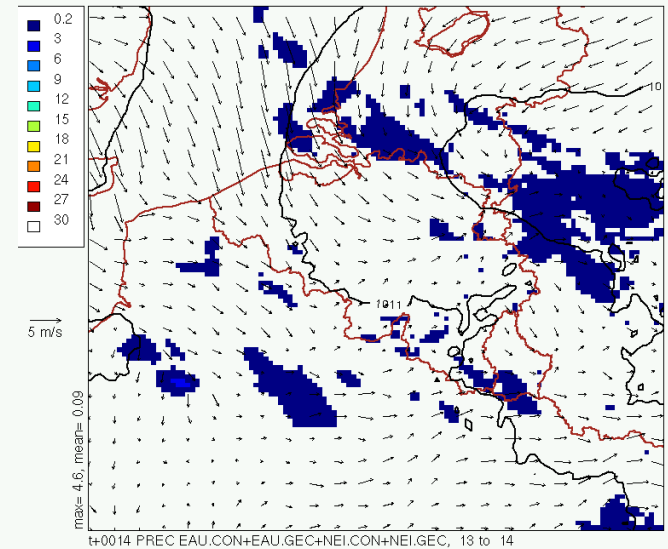


4 km

zA4i : 2005-09-10 12:00+14

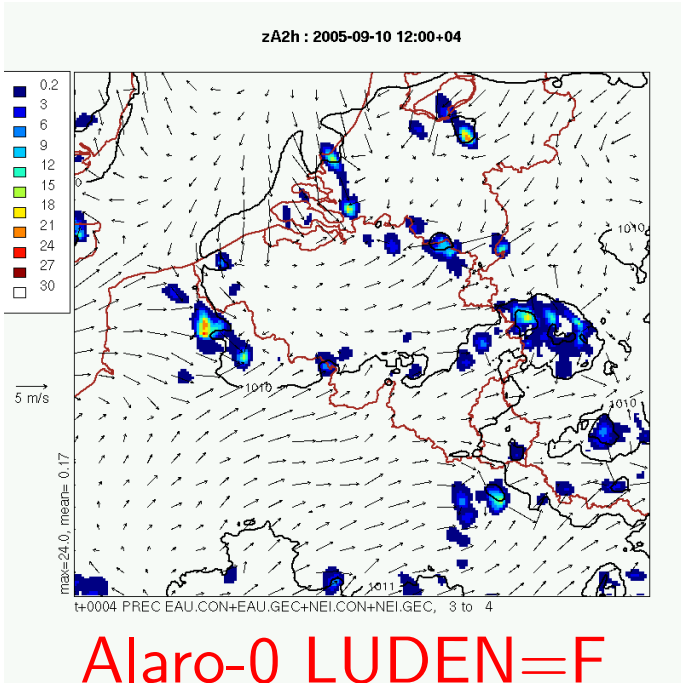


cA4q : 2005-09-10 12:00+14

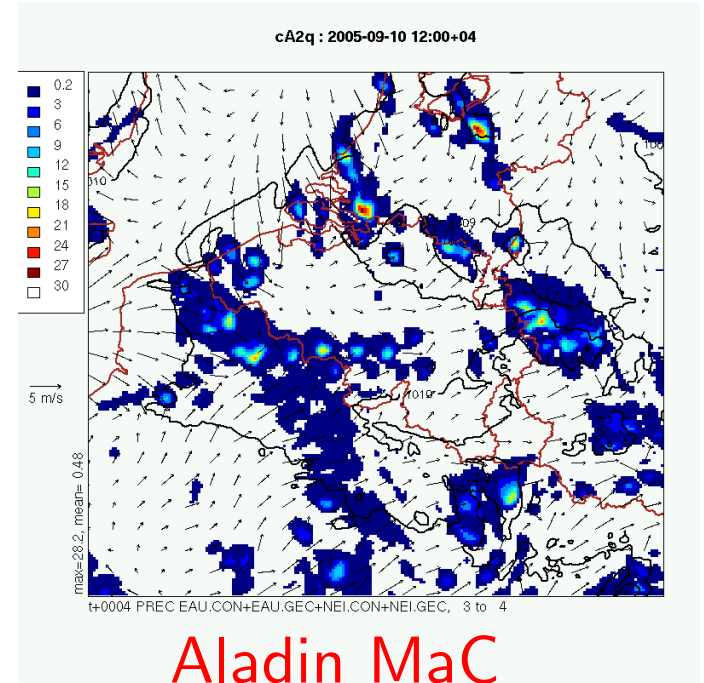


# Thunderstorms on Saturday 10 September 2005

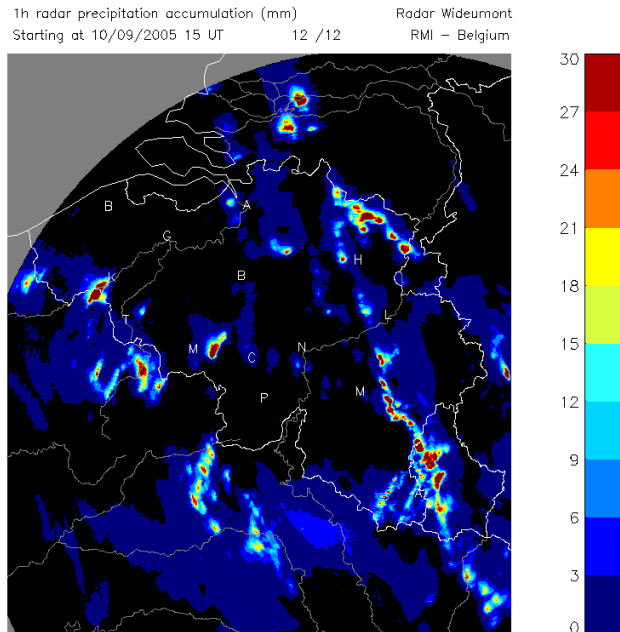
2 km



Alaro-0 LUDEN=T

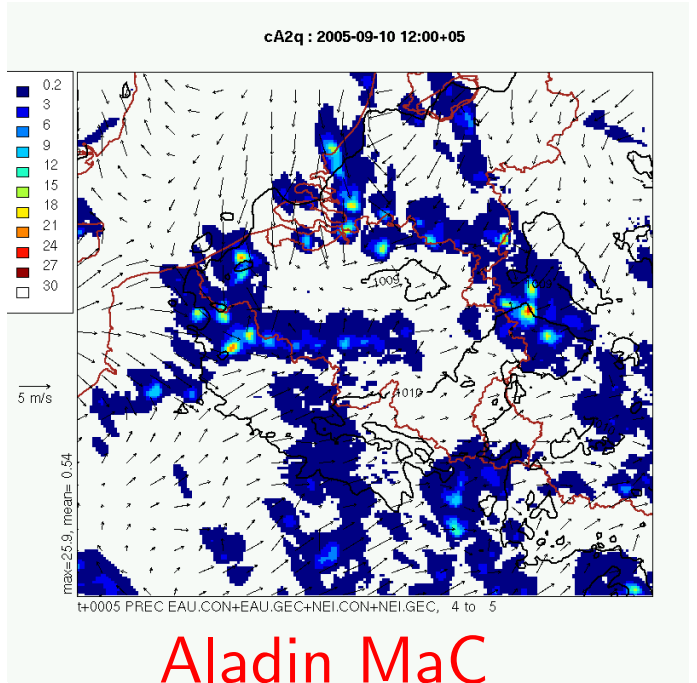
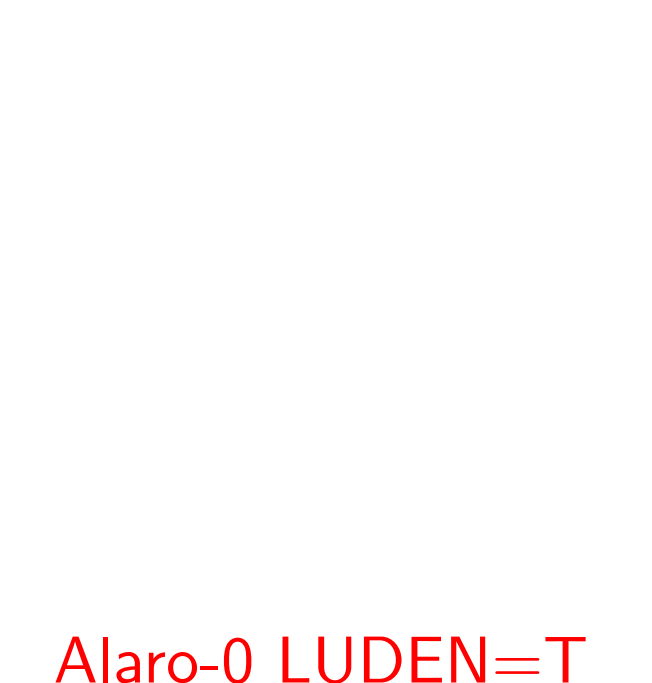
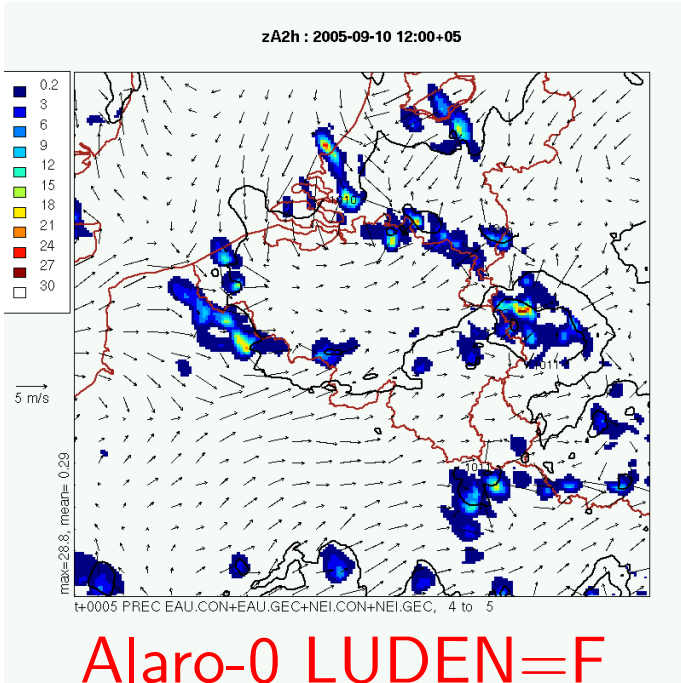


Radar

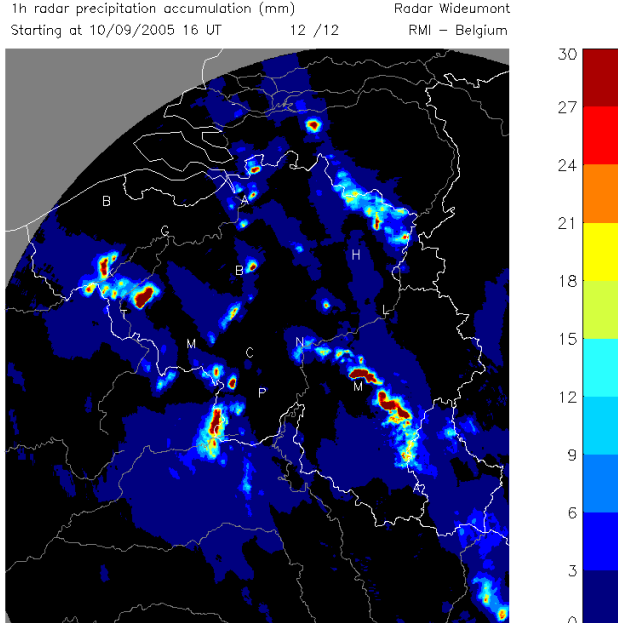


# Thunderstorms on Saturday 10 September 2005

2 km



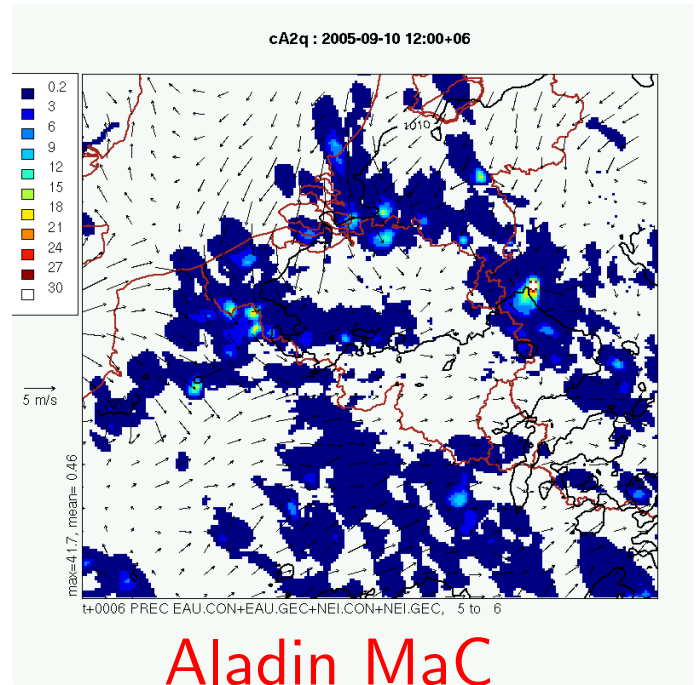
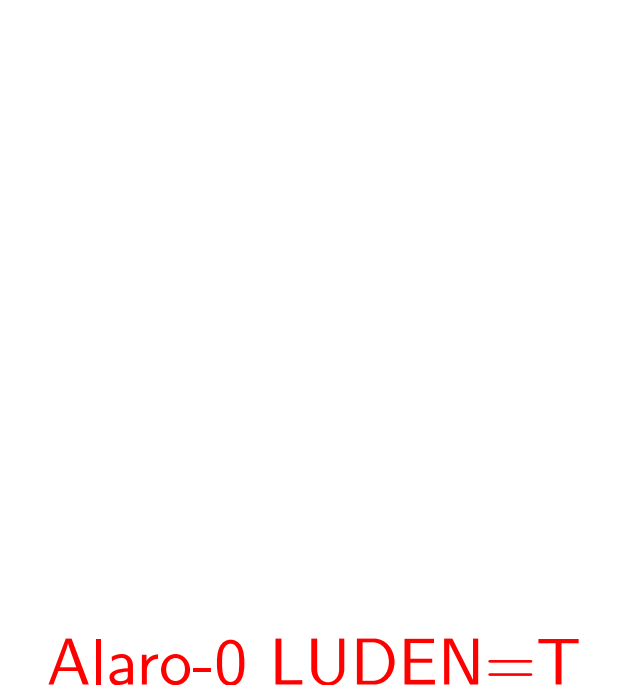
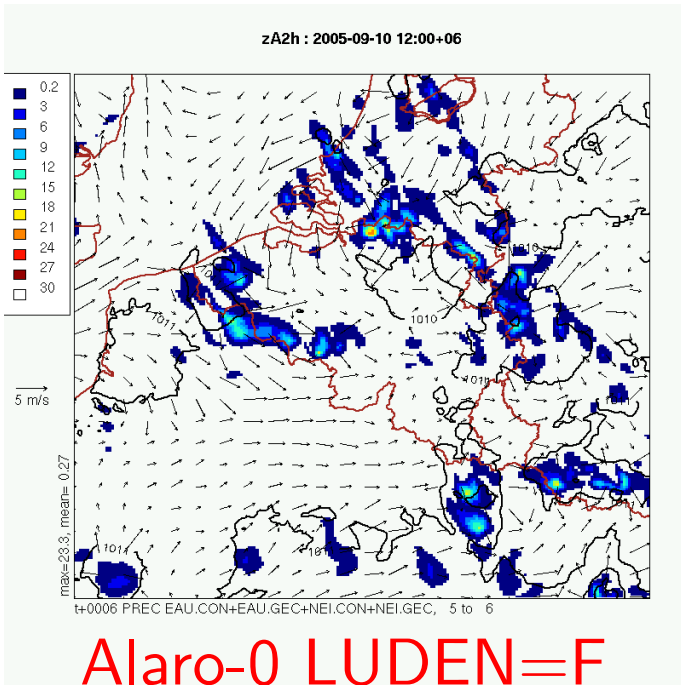
Radar



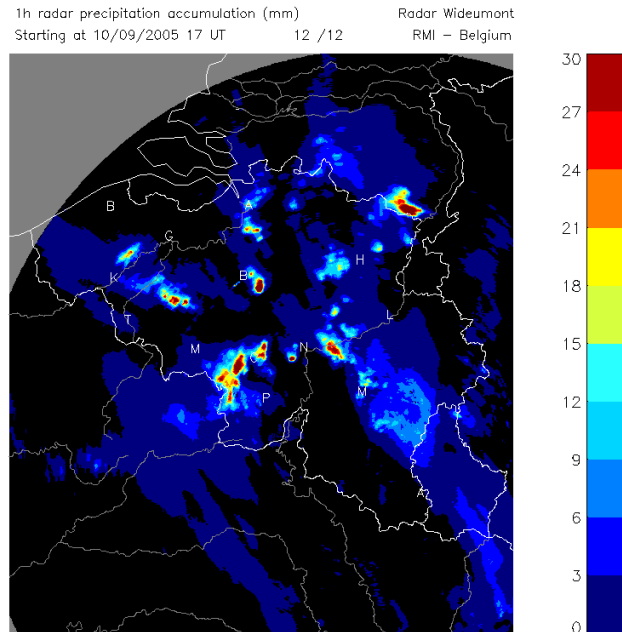


# Thunderstorms on Saturday 10 September 2005

2 km

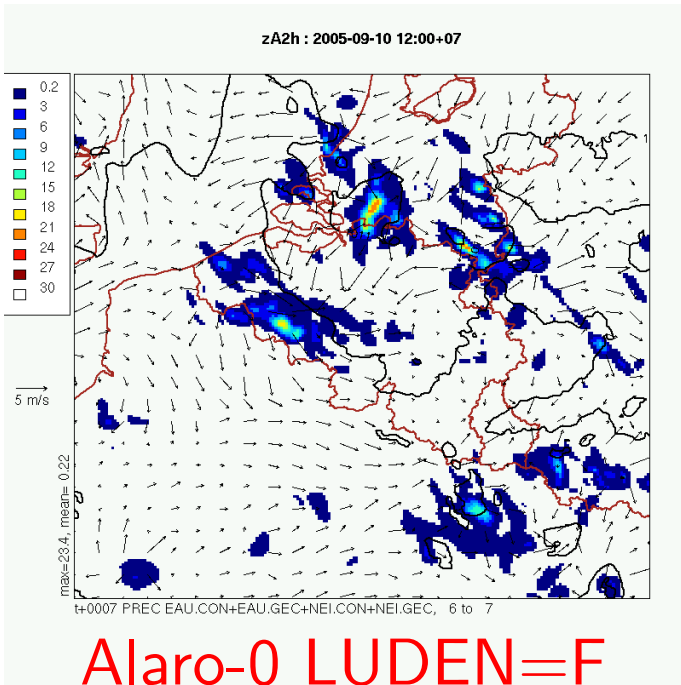


Radar

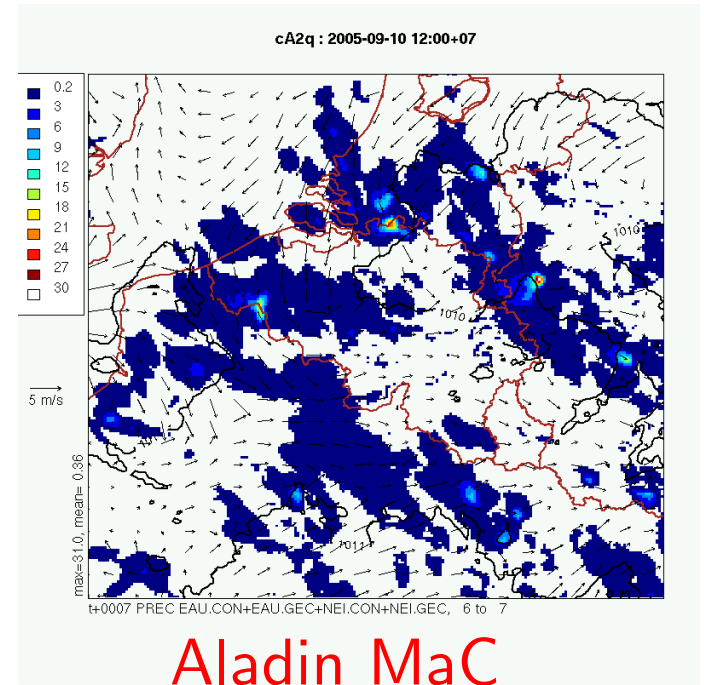


# Thunderstorms on Saturday 10 September 2005

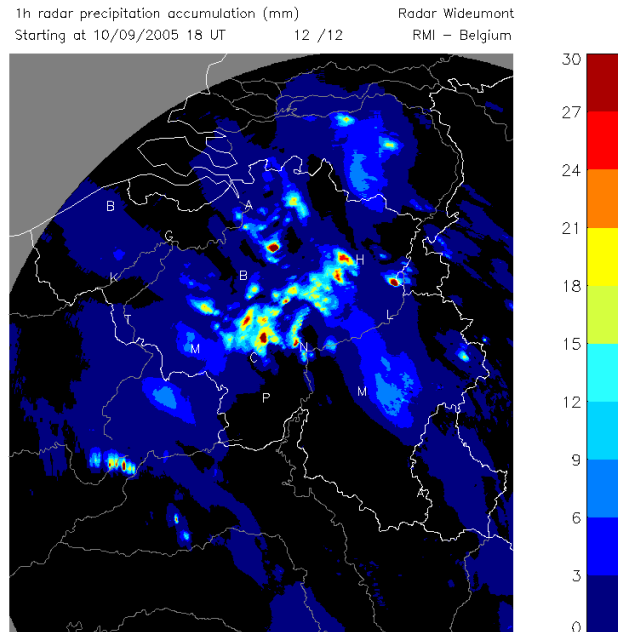
2 km



Alaro-0 LUDEN=T

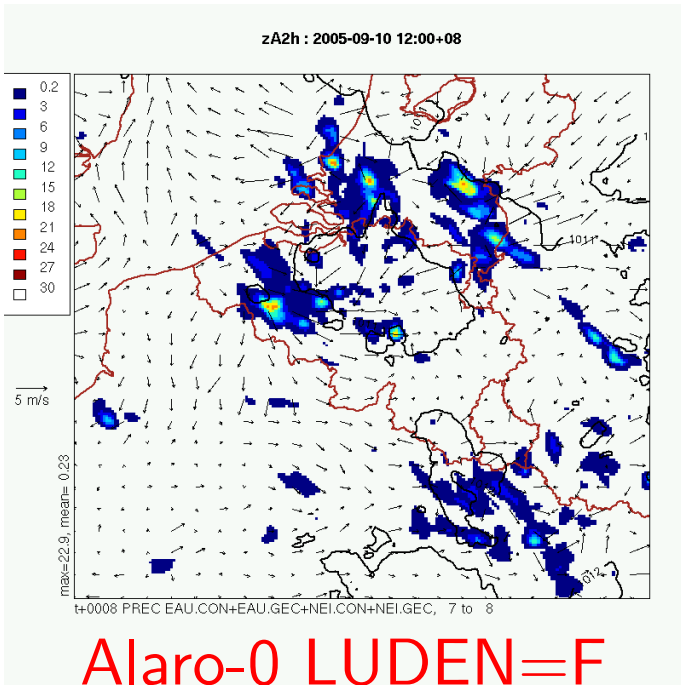


Radar

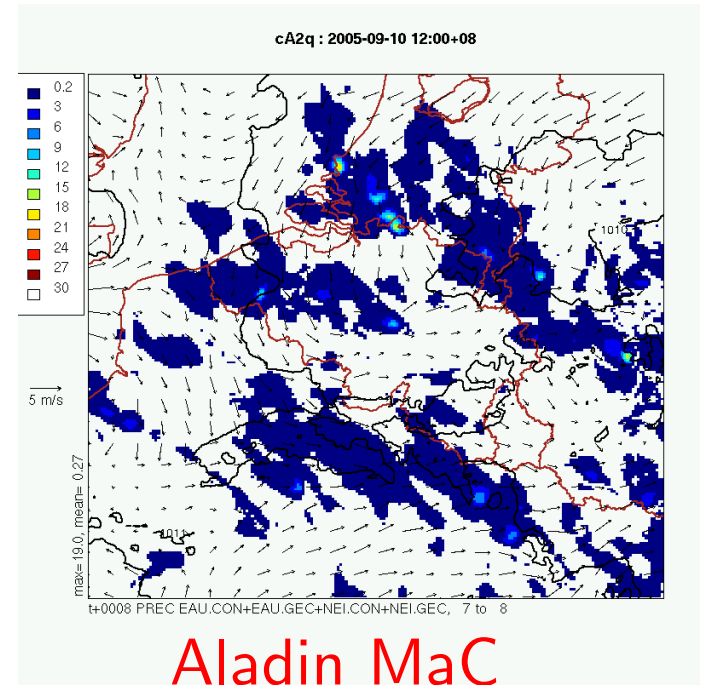


# Thunderstorms on Saturday 10 September 2005

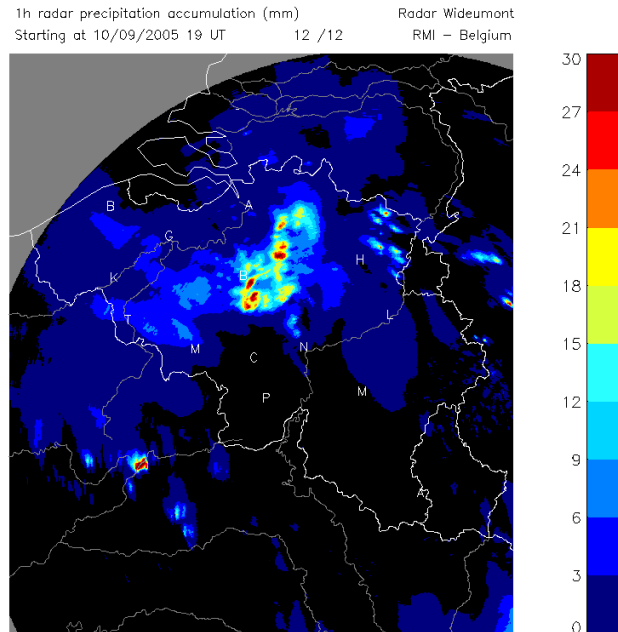
2 km



Alaro-0 LUDEN=T



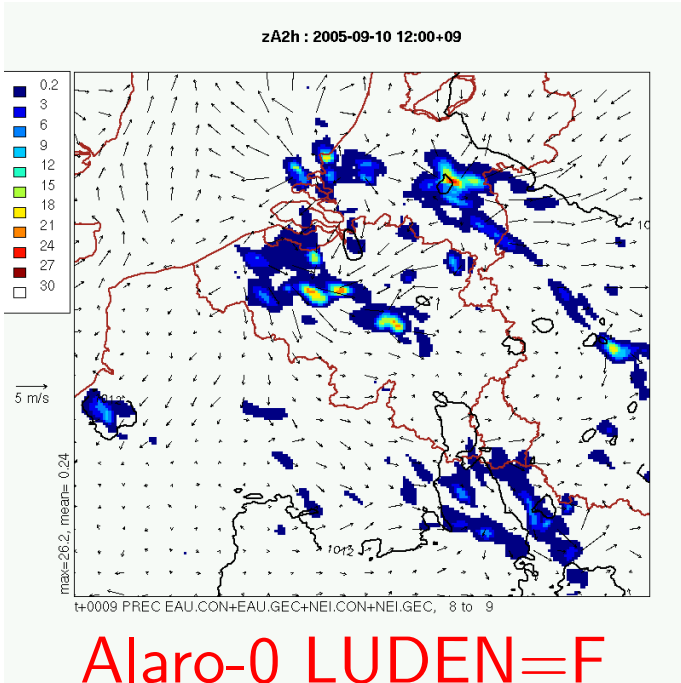
Radar



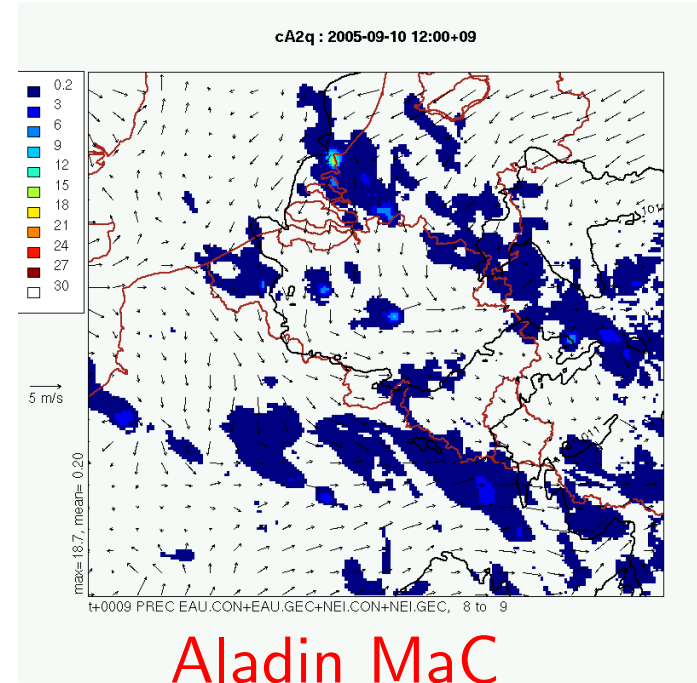


# Thunderstorms on Saturday 10 September 2005

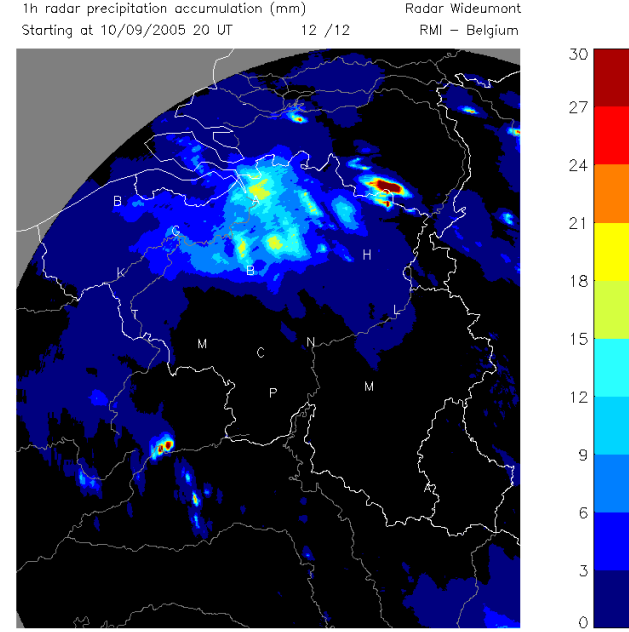
2 km



Alaro-0 LUDEN=T

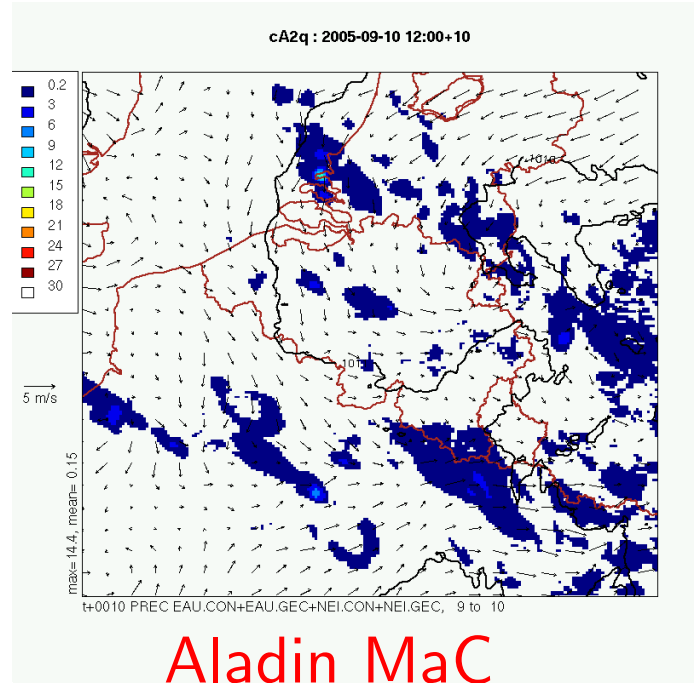
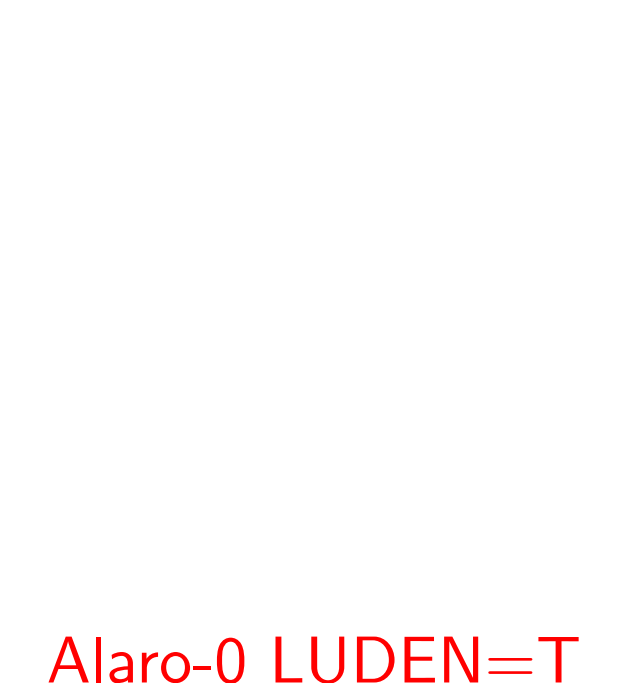
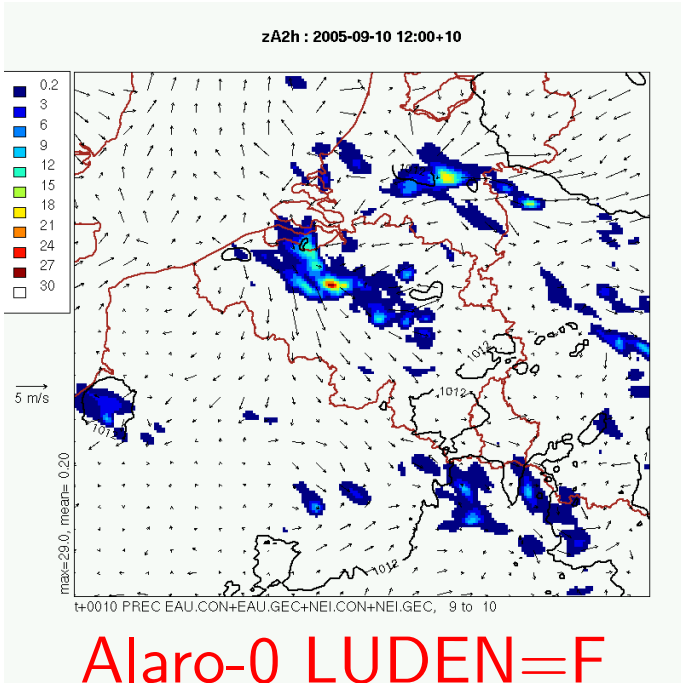


Radar

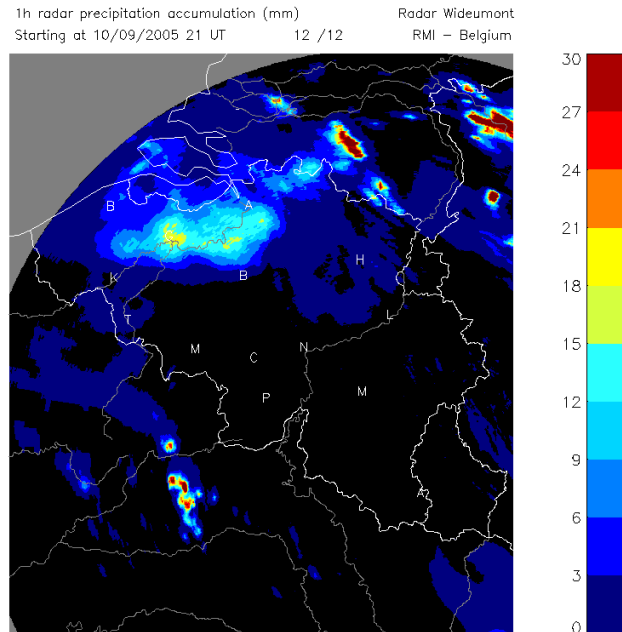


# Thunderstorms on Saturday 10 September 2005

2 km

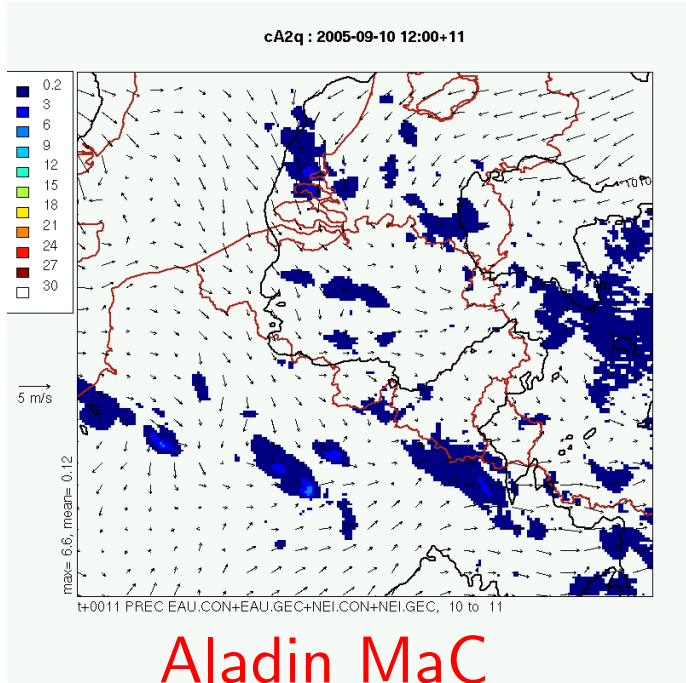
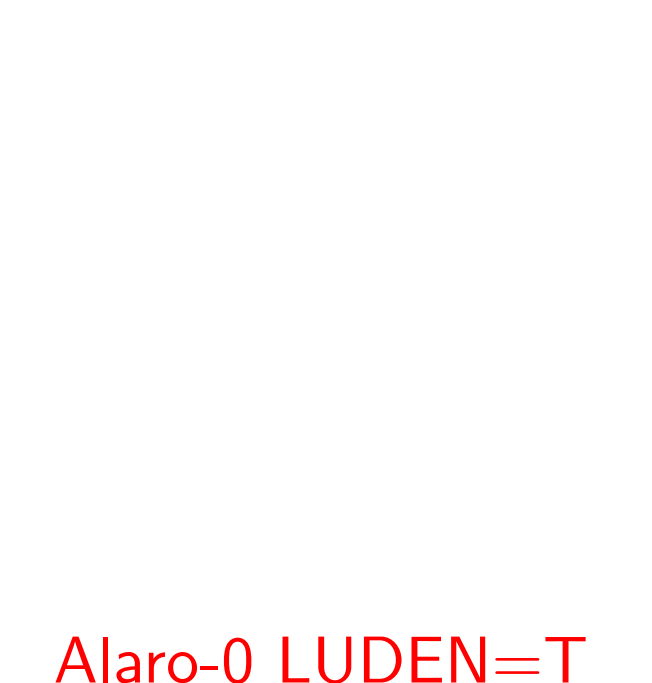
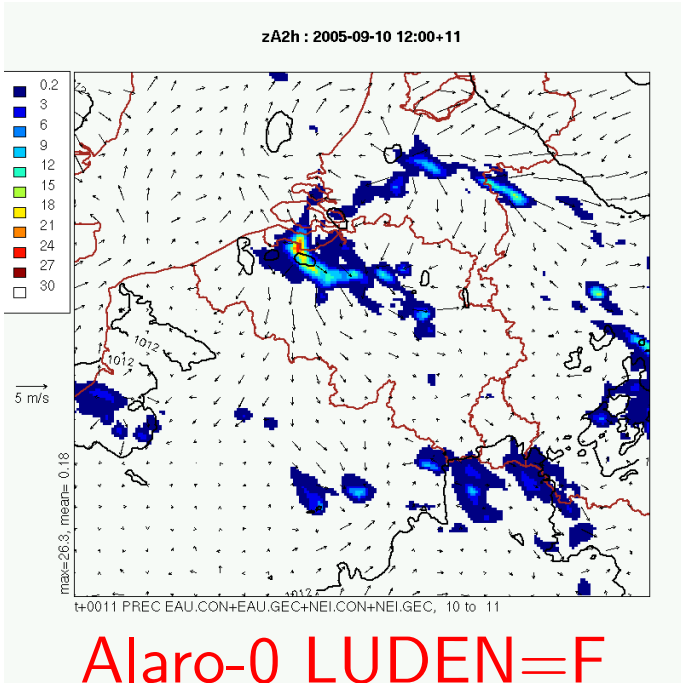


Radar

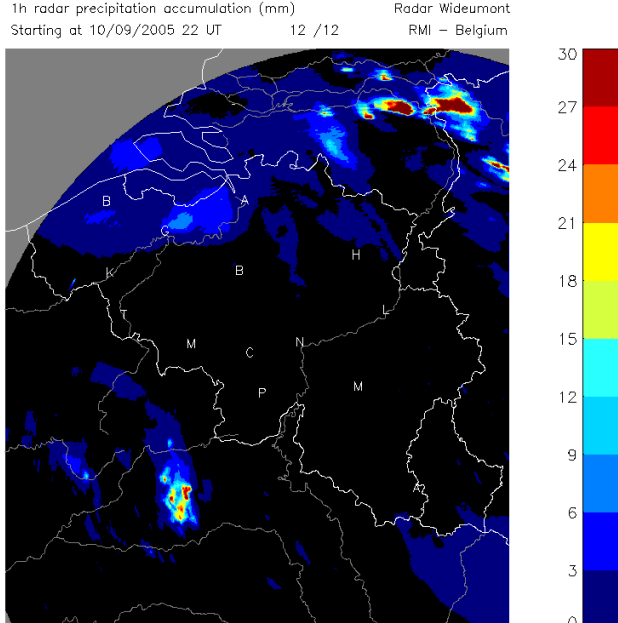


# Thunderstorms on Saturday 10 September 2005

2 km

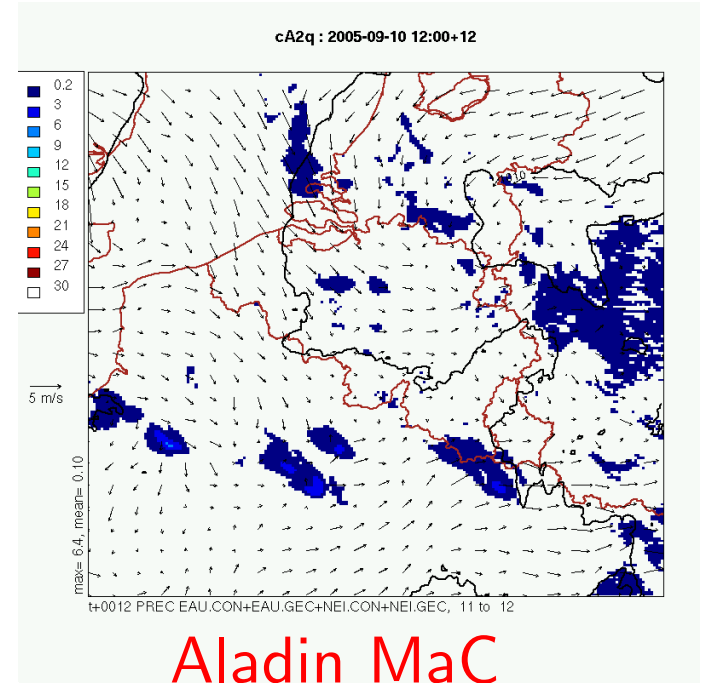
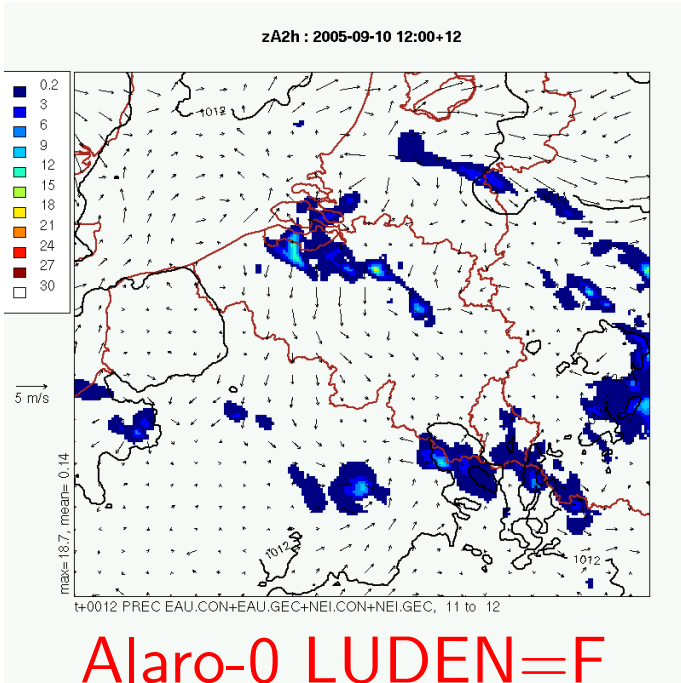


Radar

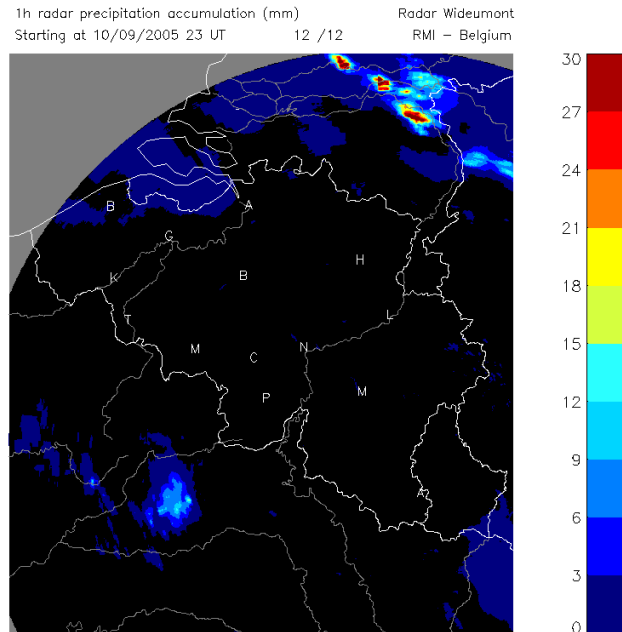


# Thunderstorms on Saturday 10 September 2005

2 km



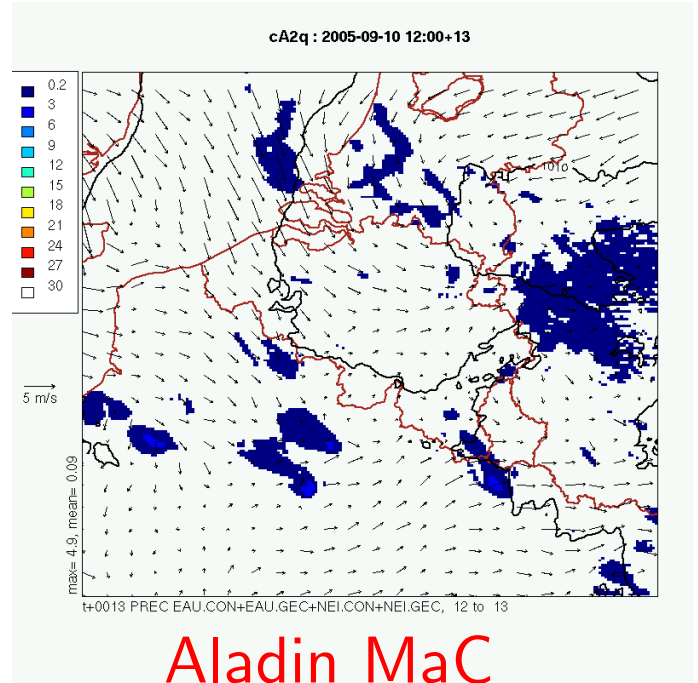
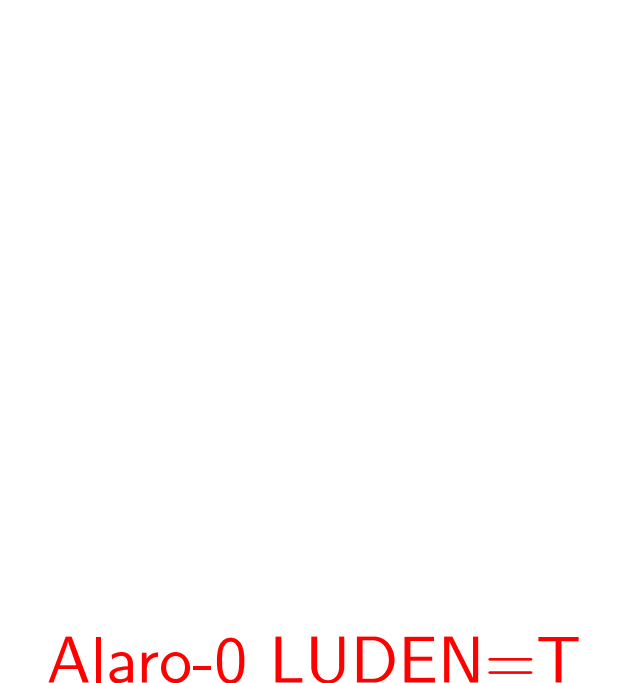
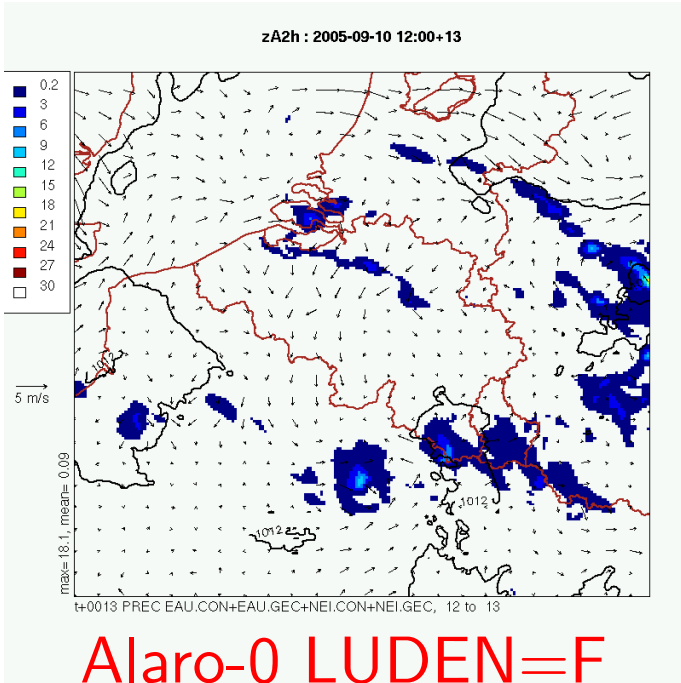
Radar



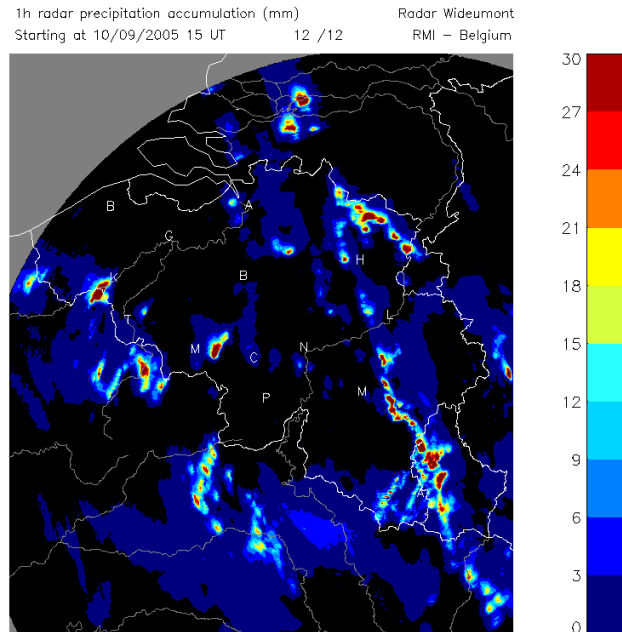


# Thunderstorms on Saturday 10 September 2005

2 km

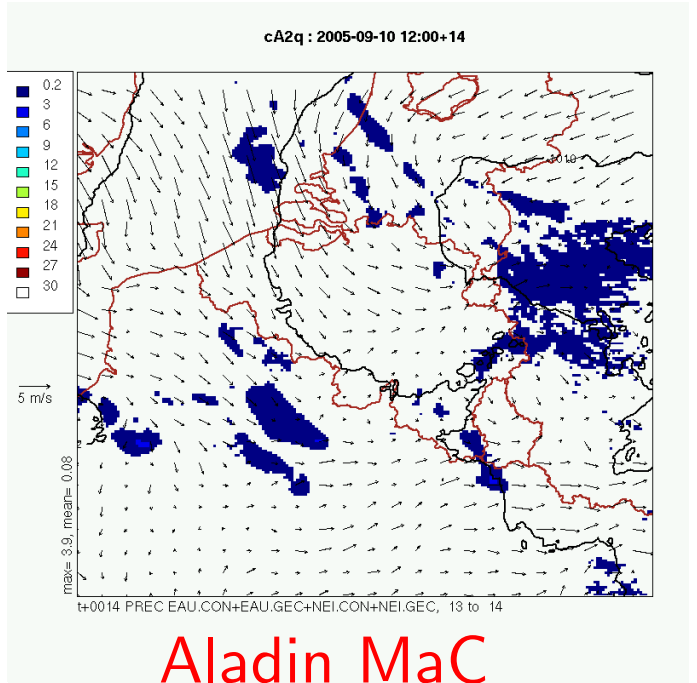
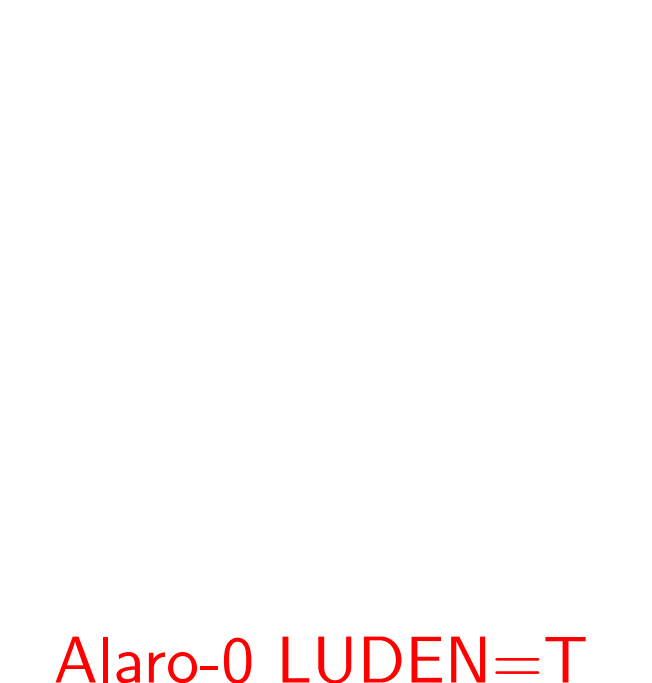
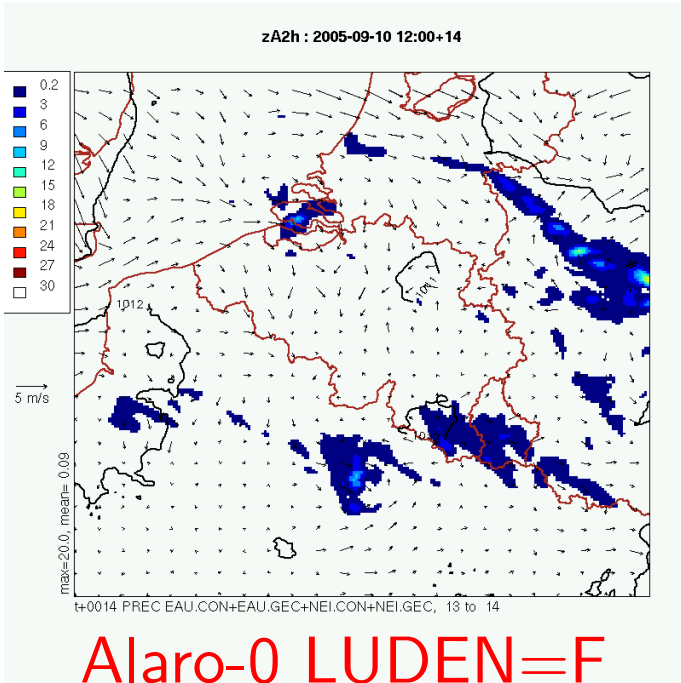


Radar

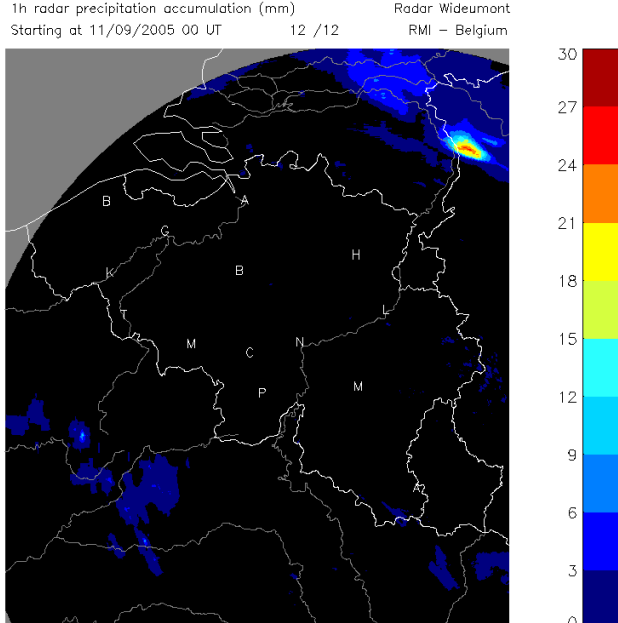


# Thunderstorms on Saturday 10 September 2005

2 km

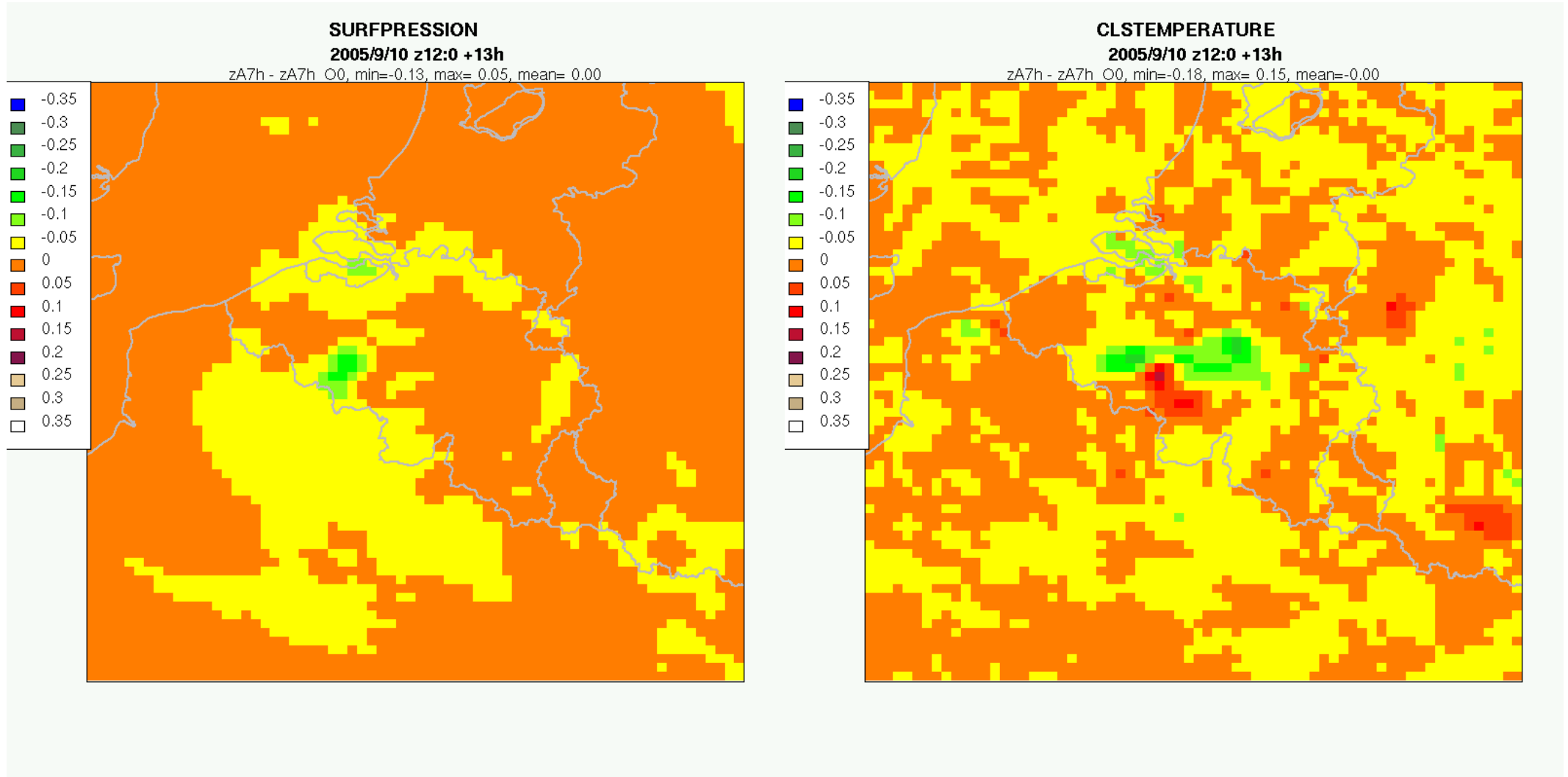


Radar



# Effect of binary optimization level

Differences  $\psi(O3) - \psi(O0)$  for 3MT routines



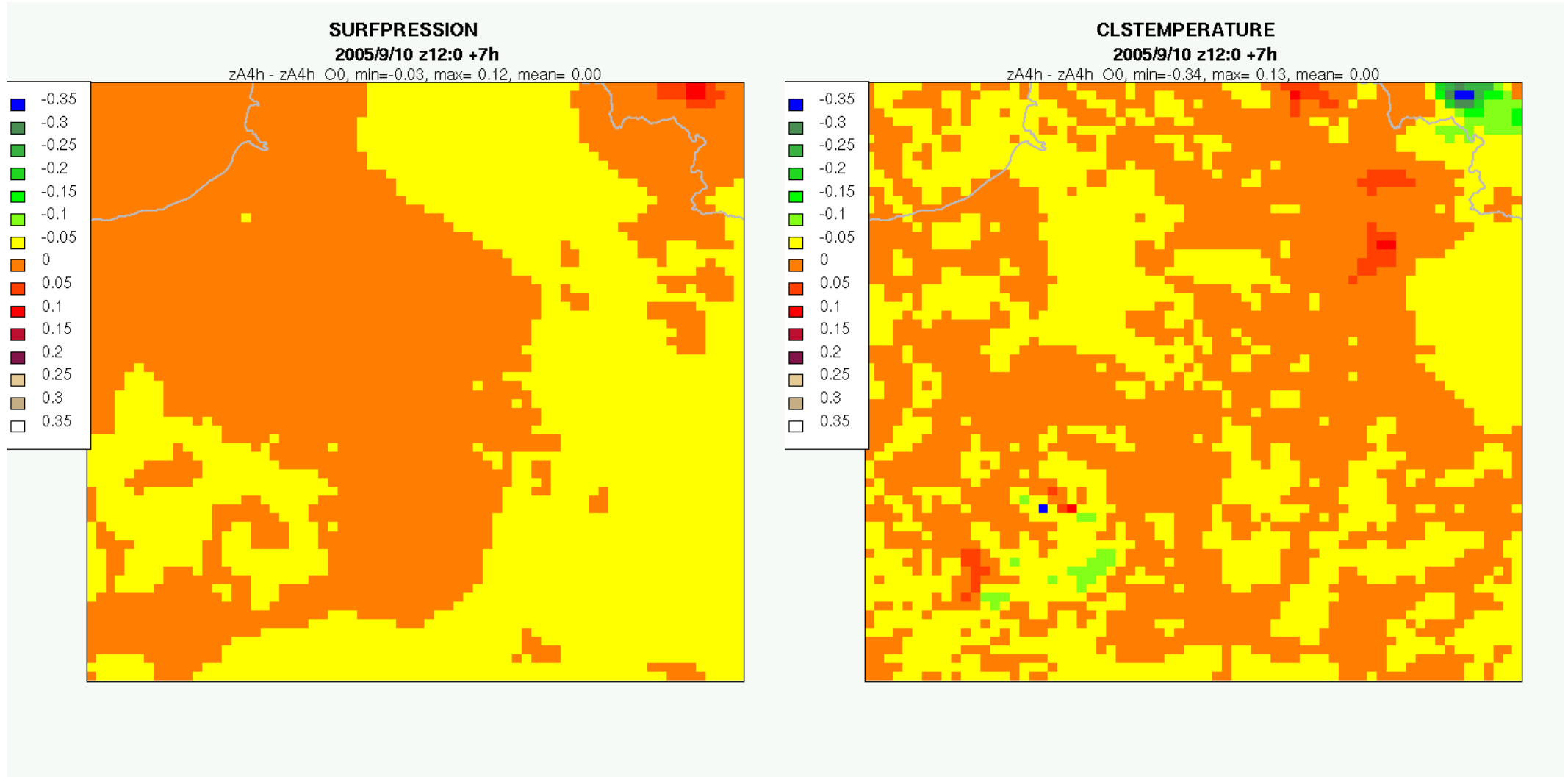
7km difference surface pressure

7km difference 2m T



# Effect of binary optimization level

Differences  $\psi(O3) - \psi(O0)$  for 3MT routines



4km difference surface pressure

4km difference 2m T

