ALADIN operations in Romania

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ALADIN Operational Suite

(Doina BANCIU , Cornel SOCI, Simona STEFANESCU, Steluta VASILIU)

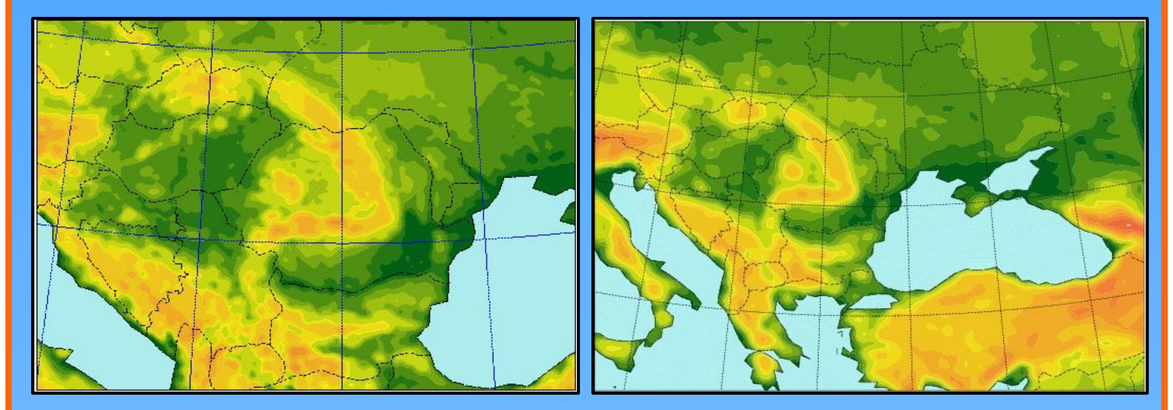
➢ **Computing platform:**

• **SUN E4500 server (8-CPU 400GHz, 8*1 GB RAM) for direct integrations and in line post processing**

• **ALPHA DEC 500 workstation (1CPU, 704 MB RAM) for different processing of model output**

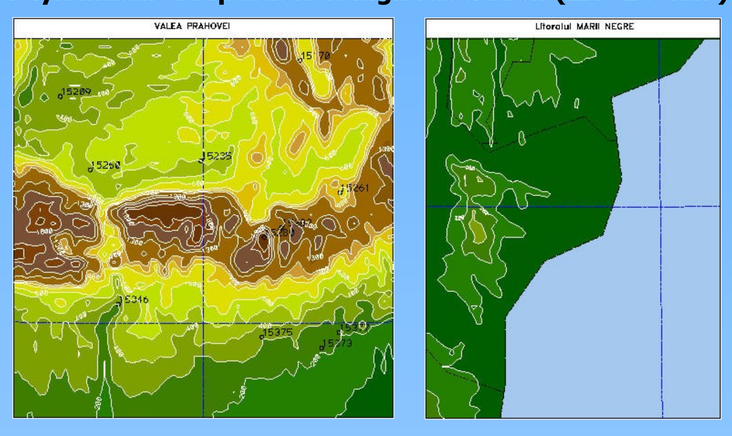
➢ **Domains (quadratic grid , Lambert projection)**

- for direct integration



Δx=10 km (144x144 points) **Δx=24 km (120x90 points)**

- for wind dynamical adaptation at high resolution (Δx=2.5 km)



➢ **Model Version : Cy28T3**

➢ **Characteristics :**

- **41 vertical levels**
- **Dynamical adaptation mode**
- **DFI initialization**
- **2TL Semilagrangian scheme with time step of 450s for 10km, 900s for 24 km**
- **Physics**
  - **EMERAUDE/PERIDOT radiation scheme including more exact computation of the exchange with the surface; maximum overlap for adjacent radiative clouds**
  - **ISBA soil and vegetation scheme; prognostic albedo for snow**
  - **Gravity wave drag: new version of ACDRAG routine; geostrophic wind for lift computation**
  - **Xu-Randall cloudiness formulation**
  - **Climatological profile for ozone**

OPERATIONAL SUITE:

➢ **2 runs/per day :**

- **new coupling and climatic file(no envelope for orography) format;**
- **old file format for local production**
- **for 10 and 24 km resolutions domains**
- **Arpege LBC; 6hours coupling frequency**
- **forecast range: 78h – 00 run; 66h for 12 run**

➢ **Post-processing**

- **in line FPOS on geographical regular grid, every 3 hours**

  pressure & near surface standard levels output in grib format

  routed towards the visualization systems in Bucharest and to

  the Regional Meteorological Centers
- **of line FPOS on model grid, every 3 hours**
- **additional post processing: stability indexes, pseudo-temp, different isotherms height**

➢ **Wind dynamical adaptation at 2.5 km**

➢ **Graphical products**

meteograms, pseudo – satellite images, height of specific isotherms, stability indexes, etc) , available on the ALADIN page of the intranet web site

➢ **Statistical adaptation**

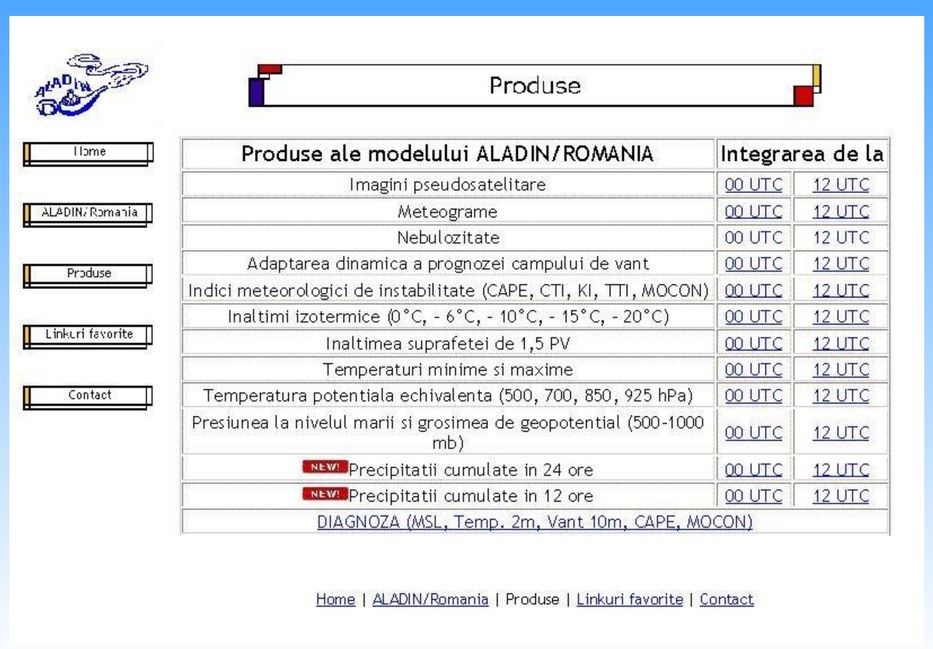
➢ **Verification**

- **local**
- **common verification project**

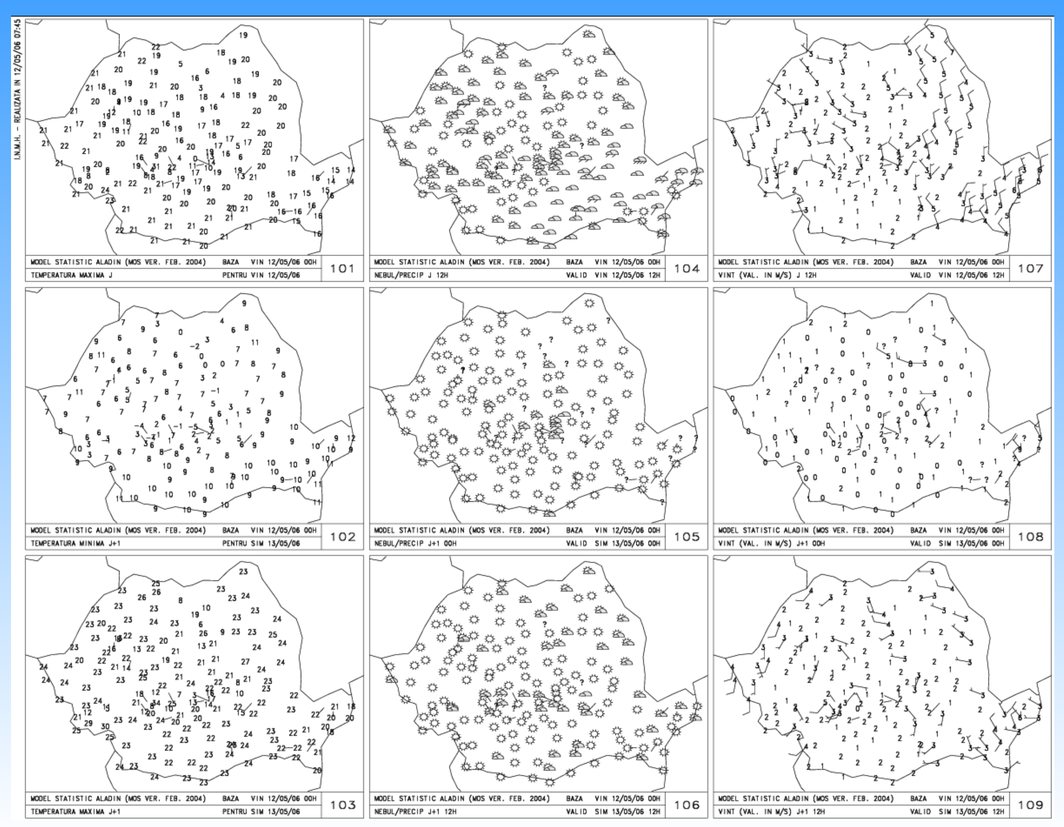
➢ **Input for Downstream applications**

ALADIN page of the intranet web site

(Steluta Vasiliu, Simona Tascu)



ALADIN statistical adaptation (Otilia Diaconu)



Downstream Applications

➢ **Transport and diffusion of pollutants** (Anca Barbu, Doina Banciu)

MEDIA model

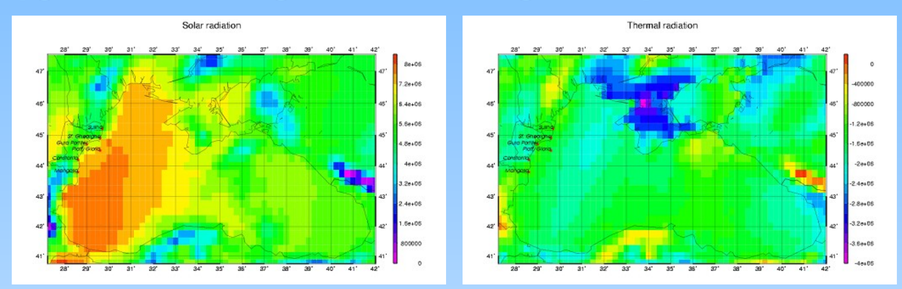
- **integrated operationally with hypothetical sources**
- **integrated for international and national exercises**

➢ **Wave models** (Simona Stefanescu)

WAM model integrated daily for the whole Black Sea basin (0.25° res.)
VAGROM model integrated daily for the whole Black Sea basin (0.25° resolution) and for the western basin (5' resolution)

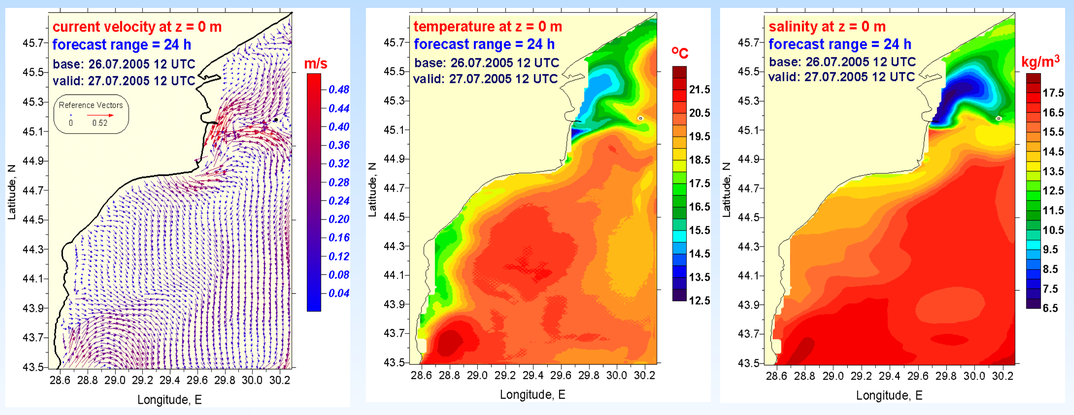
➢ **Marine circulation models** (Simona Stefanescu, Doina Banciu)

- **daily ALADIN input (2m temperature and specific humidity, 10m wind speed and precipitation, evaporation and heat fluxes) for the Black Sea Basin circulation model used within ARENA project (A Regional Capacity Building and Networking Program to Upgrade Monitoring and Forecasting Activity in the Black Sea)**



- **22-26 July 2005: a pre-operational forecasting experiment in ARENA project framework.**

The POM model (Princeton Ocean wave Model) was integrated for the Romanian coastal zone, using the ALADIN input as well



The current velocity (left), sea temperature (center) and salinity (right) 24h forecast of the POM circulation model for the Romanian coastal zone valid on 27.07.2005 12 UTC