

Products of public and national interest from the ALADIN-HR forecasting system:

- 3-day forecasts – forecasts maps and location-specific forecasts for all cities and locations of special interest in Croatia
- Forecast products for the civil protection and rescue system, and for wildfire prevention
- Forecast data serving as the basis for the DHMZ's warning system
- Forecast data input used for the DHMZ's biometeorological and agrometeorological forecasts

Specialized products from the ALADIN-HR forecasting system are provided to business partners and users for the following purposes:

- Air, maritime, road and rail traffic safety
- Implementation of agrotechnical measures and other agricultural purposes
- Management of the power grid and estimation of energy consumption
- Estimation of renewable energy production (wind, solar, rivers) and energy trading; resource assessment
- Wind load assessment for structures
- Water management
- Gas transport management
- Nautical tourism and sailing activities
- Planning of outdoor activities (construction, cultural and sports events)
- Research within the scientific community

Operational support (24/7/365) and computing infrastructure



Supercomputer – weather forecasts are produced on the DHMZ's high-performance computing system Neverin (373 TFLOPS)



Forecast archive – all forecast products are stored in a secure and continuously maintained and upgraded tape-based automated archive



User FTP system – forecasts and specialized products are available to users via the DHMZ FTP server



Continuous system monitoring (24/7/365) by on-duty operators to ensure uninterrupted service and timely product delivery



CROATIAN METEOROLOGICAL AND HYDROLOGICAL SERVICE
Meteorological Research and Development Sector
Applied Research and Modelling Department

Ravnice 48, 10000 Zagreb
+385 1 4565 666
dhmz@dhz.hr



meteo.hr



@DHMZ_HR



REPUBLIKA HRVATSKA
REPUBLIC OF CROATIA



DRŽAVNI HIDROMETEOROLOŠKI ZAVOD
CROATIAN METEOROLOGICAL AND HYDROLOGICAL SERVICE

ALADIN-HR OPERATIONAL NUMERICAL WEATHER PREDICTION

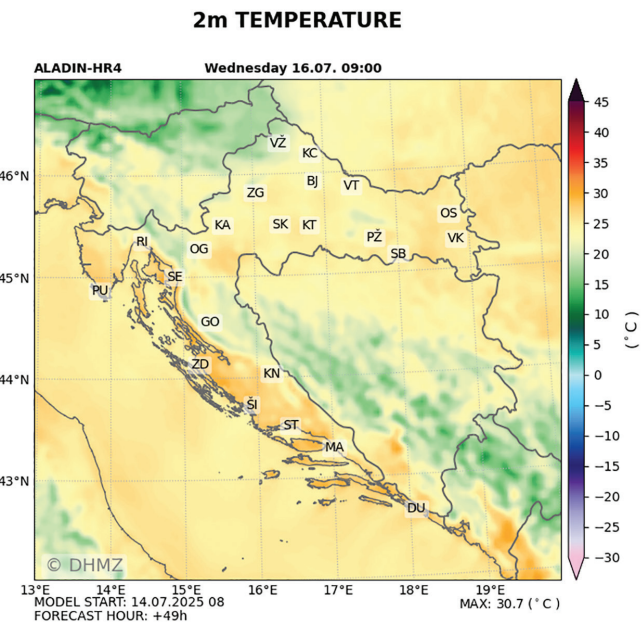
ALADIN-HR is the forecasting system operated by the Croatian Meteorological and Hydrological Service (DHMZ), based on a numerical weather prediction (NWP) model developed through international collaboration involving 26 national meteorological services within the **ACCORD** partnership.

The primary goal of the ALADIN-HR forecasting system is to improve the hazardous weather prediction with a particular focus on early warning systems for meteorological and hydrological hazards, while also ensuring timely delivery of forecast products to end users, tailored to their specific needs.

Direct outputs of the NWP model:

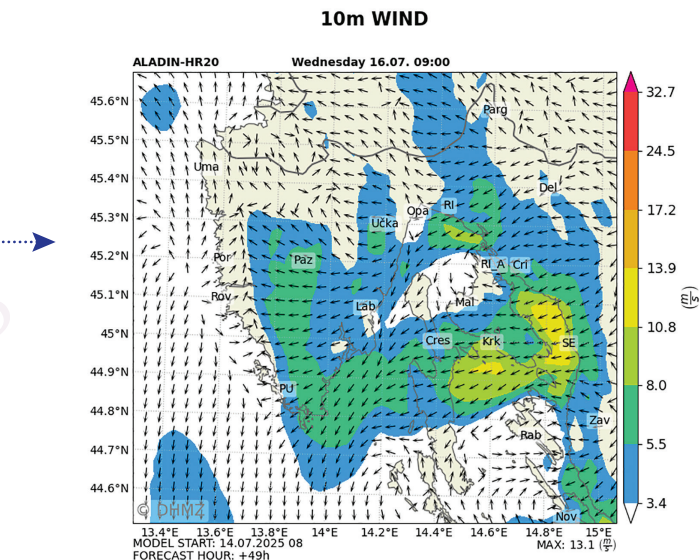
- Hourly forecast fields up to 72 hours in advance; model run initiated every 6 hours
- All relevant meteorological variables available at a horizontal resolution of 4 km

- Wind direction, speed, and gusts further adjusted to the terrain and available at a high horizontal resolution of 2 km

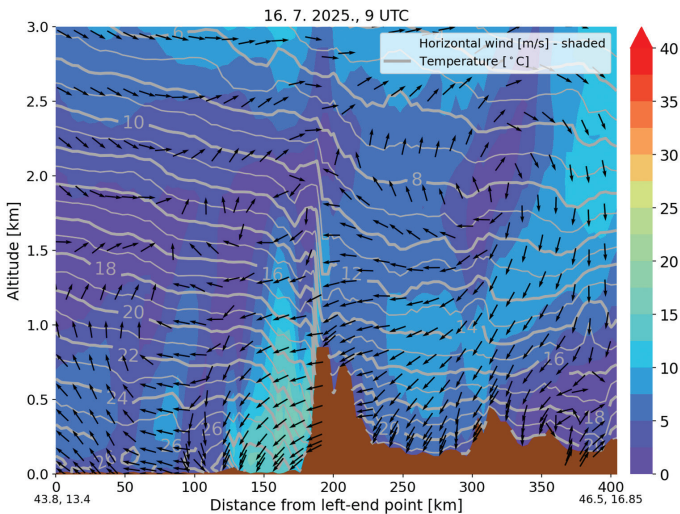


- Vertical cross-sections of meteorological variables – both spatial and temporal

- Available formats:
 - GRIB and NetCDF (machine-readable formats)
 - PNG (visualizations)
 - Text files and tables showing forecasted values



- Forecast maps of meteorological fields from the surface up to approximately 15 km above ground level



ALADIN-HR maps



Post-processing and specialized products:

- Time series of meteorological variables – **meteograms**

Date	Night	Morning	Afternoon	Evening	Max / Min	Max	Precipitation
Monday 21.07.2025.					32.4 °C / 20.8 °C		
Tuesday 22.07.2025.					27.6 °C / 20.0 °C		0.7 mm
Wednesday 23.07.2025.					29.7 °C / 21.0 °C		
Thursday 24.07.2025.					23.2 °C / 22.2 °C		

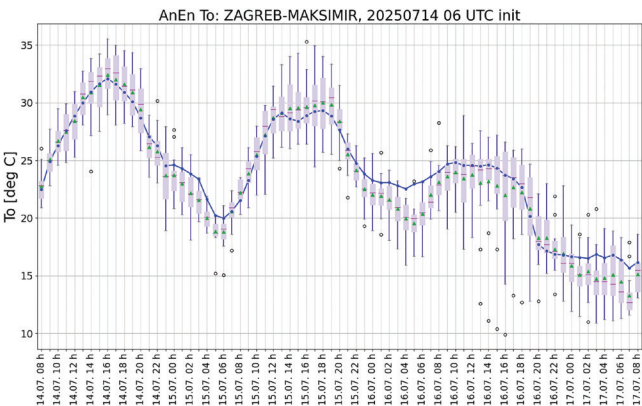
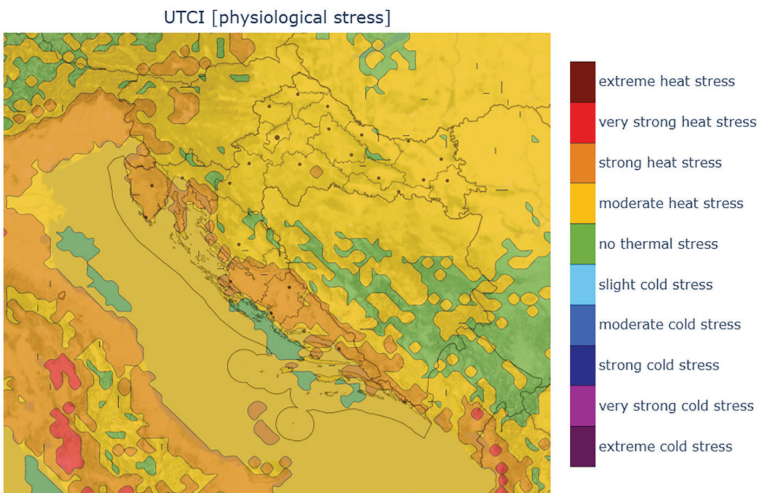
Meteograms



Meteograms Adriatic



- Calculation of biometeorological indices



- Post-processing of model data using statistical methods and machine learning techniques (analog method, neighborhood method)

Forecast quality is confirmed through real-time comparisons with observations, and additional comprehensive verification procedures.

