

Precise weather prediction

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24.06.2022.

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Industrial HPC Course



EURO

SUCCESS STORY IN Meteorology

THE PROBLEM

Institute for hydrometeorology and seismology (IHMS) and NCC Montenegro tested weather prediction WRF model with NMM core. The WRF Model is a next-generation mesoscale numerical weather prediction system designed for both atmospheric research and operational forecasting applications. It features two dynamical cores, a data assimilation system, and a software architecture supporting parallel computation and system extensibility. The model serves a wide range of meteorological applications across scales from tens of meters to thousands of kilometers.

THE HPC PROBLEM DOMAIN

- To speedup numerical weather prediction
- To receive better and detailed weather forecast

THE SOLUTION

The WRF model is used for weather prediction on IHMS cluster on daily basis and on smaller cluster with worse performances. Model is installed on Yotta HPC cluster as on virtual lab, adjusted for Montenegrin purposes and HPC infrastructure. Newest installation on the HPC cluster, supported by NCC Montenegro, enabled IHMS to

- improve precision and prediction and
- compare WRF with other models used for Montenegrin weather prediction.

Received results can help in new analysis and future projects in precise agriculture, tourism ...

THE BENEFITS

- Detailed and more frequent weather prediction
- Weather prediction suitable for many areas (precise agriculture, tourism, aero industry ...)

