

Application and verification of ECMWF products 2016

Hydrometeorological Service

1 Summary of major highlights

Since our country became a co-operating state of ECMWF, the amount of forecasting products used in the operational work is growing continuously (also the range of ECMWF products is increasing). There are major tools in the forecasting process. Most frequently used products are: ten days deterministic forecasts, also ENS Meteograms, from the Ensemble Prediction System - EFI, monthly forecast etc.

As major highlights for the last year can be pointed out the ECMWF visit to our HMS and the participation of one forecaster to the training course: Use and interpretation of ECMWF products. We found out these face to face working meetings invaluable useful, despite there is a lot training material on the web-site of ECMWF. These two events allowed us another way of interpreting and looking at the ECMWF products. Also we found out some products and aspects of products that were not known to us before.

2 Use and application of products

ECMWF products are used in the everyday operational work for preparing short-range forecasts, which are designed for different users, such as governmental institution, public, media etc.

Medium-range forecast is also mainly based on ECMWF products from deterministic model as well as EPS products. In the process of preparing forecast for severe weather conditions and warnings backbone is ECMWF and forecasting products as EFI, probabilities etc.

Monthly forecast is often using for the monthly outlook of the weather. From last year seasonal forecast was started to use as one of the tools for preparing of the seasonal outlooks.

ECMWF forecast products are exploring with password, certificate and token. We find EC-Charts web service most useful with a wide range of possibilities in combination of meteorological parameters, different time steps, projections and creating of meteograms for a lot of places.

2.1 Post-processing of ECMWF model output

Describe the different ways in which you post-process ECMWF forecasts, in the following categories:

2.1.1 *Statistical adaptation*

2.1.2 *Physical adaptation*

Our intention is to substitute initial data and boundary conditions from NCEP with those from ECMWF for running of the WRF-NMM, a non-hydrostatic limited-area model, which is running twice a day in our Service. Some preparation are already done, but due to some technical problems it is not started yet.

2.1.3 *Derived fields*

2.2 Use of ECMWF products

The most exploited way of using ECMWF products is using of ECCharts and ENS Meteograms. There are already prepared and saved combinations of meteorological parameters on the dashboard and depending on the synoptic situation we are looking in the appropriate parameters.

For severe weather situations we are looking at EFI (and synoptic situation), but also we started to use ENS cumulative distribution function CDF and Meteograms-ENS Extreme forecast index (EFI), especially for the precipitation and temperature. We are always waiting for the ENS Meteograms (10:20 and 22:20 local time) to see the probabilities of the forecasted parameters.

3 Verification of products

4 Feedback on ECMWF “forecast user” initiatives

Please comment on whether you use the following, on how useful you find them, and on any changes you would like to see. The “known IFS forecast issues” page – (see: <https://software.ecmwf.int/wiki/display/FCST/Known+IFS+forecasting+issues>) and the “severe event catalogue” (see: <https://software.ecmwf.int/wiki/display/FCST/Severe+Event+Catalogue>).

We didn't know and didn't use these pages, but as now we discovered them, seems they would be very useful for the forecasting process. There could be find answers for some our dilemmas and for some deviations that we also found in the forecasted parameters. The Severe event catalogue could help for better understanding of some weather situations and their impacts, as well as which parameters are appropriate to analyze and the limitations of the models.