Application and verification of ECMWF products 2015

MeteoLux – Administration de la navigation aérienne

1. Summary of major highlights

2. Use and application of products

ECMWF products are mainly used for short and medium range forecasts, via the French Synergie system, together with Météo-France products Arome and Arpège.

2.1   Post-processing of ECMWF model output

No post-processing of meteorological data is performed

2.1.1   Statistical adaptation

2.1.2   Physical adaptation

Include limited-area models, hydrological models, dispersion models etc. that use ECMWF model data (HRES and/or ENS) as input (eg for initial conditions / boundary conditions / ..)

2.1.3   Derived fields

Include post-processing of ENS output e.g. clustering, probabilities

2.2   Use of ECMWF products

As mentioned above, ECMWF products are used in daily operational work for short and medium range forecasts, combined with Arome (short range) and Arpège (short to medium range). The forecasters use mainly the cloud coverage, precipitation and wind. For severe weather in medium range, gusts are considered. The ENS Meteogram is commonly used for medium range temperature forecasting as well as for precipitations.

3. Verification of products

Include medium-range HRES and ENS, monthly, seasonal forecasts. ECMWF does extensive verification of its products in the free atmosphere. However, verification of surface parameters is in general limited to using synoptic observations. More detailed verification of weather parameters by national Services is particularly valuable.

3.1   Objective verification

No objective verification is performed.

3.1.1   Direct ECMWF model output (both HRES and ENS)

Focus on local weather parameters verified for locations which are of interest to your service

3.1.2   ECMWF model output compared to other NWP models

Compare the performance of ECMWF models with other NWP models used by your service

Our service is not running an in-house model

3.1.3   Post-processed products

e.g. Kalman filtered products, calibrated ENS probabilities, etc.

3.1.4   End products delivered to users

3.2   Subjective verification

3.2.1   Subjective scores (including evaluation of confidence indices when available)

In weather situations with low cloud coverage or clear skies the forecasted 2m temperature by ENS and deterministic output is in general 2-3 °C too low.

3.2.2   Case studies

Severe weather events/non-events are of particular interest. Include an evaluation of the behaviour of the model(s).

4. References to relevant publications