Application and verification of ECMWF products 2008

Service Météorologique de Luxembourg (SML)

1.   Summary of major highlights

ECMWF products are regularly used for weather forecasts in Luxembourg. Especially our medium range forecasts are partly based on products from ECMWF.

2.   Use and application of products

Our meteorological office does not have the means to produce own forecast models, although we are using the products from ECMWF directly for our different forecast products and for verification of models from other suppliers.

2.1   Use of products

Aeronautical and public weather forecasts are mainly based on models like ALADIN and ARPEGE. Besides of these we are using ECMWF deterministic large scale (5.0) and small scale (2.5) models mostly for medium range forecasts. The probabilistic interpretation of the forecasts from the Ensemble Prediction System (EPS Meteogram) is our most important source for temperature and precipitation predictions.

3.   Verification of products

The verification of the different models is based on the experience of the forecasters. It is therefore only done in a subjective manner by comparison with other models and with the actual synoptic situation.

3.2   Subjective verification

As we do not appear to have a common scoring system for verification in our MET Office, it depends on the forecaster's estimation to evaluate and decide which of the deterministic models is the most reliable.

More experience we have with the EPS Meteogram as it is frequently used in our office, especially the parameters "Total Precipitation" and "2m Temperature" are used as main source for short range and medium range forecasts. On general we receive a relatively good result for Luxembourg airport using the Ensemble Prediction System from ECMWF for our.

"Total Precipitation" gives rather realistic results on rain amounts but tends to underestimate it from time to time. We could not detect a special weather situation for this phenomenon.

"2m Temperature" gives quite correct figures on cloudy (7/8 or 8/8) weather conditions. With more solar radiation (especially in the summer season) we experienced that the maximum temperature of the EPS Meteogram is regularly at least 2°C too low.

As we are very satisfied with the EPS Meteogram we would find it helpful if you would add wind directions to the existing parameters and split the "Total Cloud Cover" into three levels.

We look forward to work with ECMWF also in future.