



Verification of wind gust warnings at DWD

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The German Weather Service (DWD) has been developing a semi-automatic warning decision support system (AutoWARN) to help forecasters to generate the warning status over Germany. This system combines forecasts from different NWP systems (COSMO-DE_EPS, ECMWF-EPS, ICON) by applying Ensemble Model Output Statistics (EnsembleMOS) to provide warning proposals that can be quality controlled and modified manually by the forecasters.

In order to know the benefits of the contribution of the individual models to the warning proposals or the improvements of the AutoWARN system, warning verification is required. A warning of a particular variable of interest (e.g. wind above 14m/s) is defined temporally by three times: the time when the event is issued, the time when the event is expected to start and the time when the event is expected to finish. Thus, warnings are given for time windows and their definition differs from the usual forecast products given for a particular time unit, for example forecasts of wind above 14m/s at a particular hour. This leads to some deficiencies in the standard hourly verification (e.g. the double penalty problem) and therefore the development of new verification approaches is required.

This work shows examples of object oriented verification applied to the verification of wind gust warnings provided by the AutoWARN system at DWD. The warnings are compared to SYNOP observations. A comparison of the final warning status given by the forecasters, the warning proposals provided by AutoWARN and the individual forecasts given by the models will be presented.