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Improving Decision Support Systems for the Operational Weather and Warning Services at DWD

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For many years now, the semi-automatic decision support system AutoWARN has been operationally used for the weather warning service at DWD. Automated warn proposals based on statistically combined NWP model and ensemble forecasts or based on combined nowcasting systems can serve as a basis for the issuance of individual manual weather warnings by forecasters.
A single warn forecast product (ModelMIX) is derived using an Ensemble Model Output Statistics approach based on logistic and linear regression combining the NWP models COSMO-DE-EPS, ECMWF-EPS and ICON. This product serves as a basis for the generation of warn proposals for a forecast scope of about one day. Warn proposals need to be detailed to sufficiently represent the warning situation, while at the same time they need to be manually manageable by forecasters.
The system in order to address these requirements (ASG) has recently been extended: The existing current operational warn status as well as the preceding automatic warn proposal are taken into account for the generation of a new warn proposal. In this way, the effort required by the forecaster for the integration of new additional warnings in relation to an existing warn status can be reduced.
Besides these improvements, a completely new product has been generated, a more generalized automated "Daily Model Guidance (DMG)" product for forecast days 1 to 3. This product is much coarser in space and time. It gives an automated integrated graphical overview of the most significant weather phenomena for each day at a glance.
Recent results from this extended system as well as from the more detailed warning products are shown and discussed. In addition, the warning system has been further adopted to extended customer requirements, products include high resolution internet and mobile app visualizations with high update frequencies as well as more coarse warn products in space and time for individual client needs.