



The automated generation of weather warning proposals as part of a decision support system for the weather warning service

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At the German Weather Service (DWD) official weather warnings are not issued by a fully automated system but manually by forecasters. However, to ensure that forecasters can cope with the increasing amount of numerical weather prediction and observational data, DWD has been developing a decision support system within the project AutoWARN. Part of this project is the generation of automated weather warning proposals that serve forecasters as guidance.

This work demonstrates how automated weather warning proposals for severe gusts and continuous rainfall are generated from statistically post-processed numerical weather forecasts on a probabilistic basis. The warning proposals need to be clearly structured to allow forecasters to make efficient use of them. Verification results prove that automated warnings are suitable to enhance DWD's official weather warnings. With automated warning proposals warnings for gusts and continuous rainfall can be issued at an earlier time with a similar accuracy. Proposals for other warning parameters will additionally be investigated and verified in the near future.

For an optimal embedding into the forecaster's workflow the generation of warning proposals needs to account for the warnings that have already been issued. Only proposals that significantly differ from existing warnings should be presented to the forecaster. A prototype illustrates the challenge this poses for developing a semi-automated warning system.