



The new impact-based severe weather warning system at the Austrian Meteorological Service (ZAMG)

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High impact weather phenomena cause a lot of damage to infrastructure and vegetation, even injuring or killing human beings. Therefore the information about intensity, impact, exact timing and location of such hazards is crucial for many people, e.g. decision-makers, emergency response organisations, civil protection agencies, infrastructure authorities, general public and private costumers. The implementation of impact-based forecasts and warnings is strongly connected with a good service delivery strategy. Close cooperation with the costumers is necessary; this leads to an improved knowledge and understanding of the needs of the users.

In the last years there has been an increasing pressure from the clients on the forecasters to move away from the ‘how does the weather will be?’ information to a ‘what does it mean?’ statement. Therefore the warning philosophy at the Austrian Meteorological Service (ZAMG) has changed by moving from a threshold to an impact-oriented weather warning system. Examples will be shown to illustrate the importance of the impact-based approach in severe weather conditions.

Risk, impact and weather phenomena can be combined e.g. with the weather impact matrix from UK Met Office, which we use at ZAMG as a basic principle to generate impact-oriented warnings. In this matrix the colour coding of the warnings is a function of impact and likelihood of severe weather phenomena. The uncertainty of high impact weather is derived directly from the ECMWF ensemble prediction system by looking into different weather scenarios. Impact is a quantity that can only be assessed in collaboration with external partners and users. It will be presented how this non-meteorological information is used within the warning process.

The final determination of the warning level of the meteorological hazard is done together with all shift forecasters to avoid pressure on a single forecaster and to enable more balanced decisions. In case of red alerts external parties, such as avalanche experts, hydrologists or fire brigades can be involved when issuing a warning. A tool for checking the quality of data from fire brigade operations will also be shown. Finally additional data sources that are needed in the near future will be discussed.