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Using the ECMWF Probability of precipitation type product during severe winter situations in February 2019

The road meteorology is a regular and one of the crucial parts of winter weather forecasting at the Czech Hydrometeorological Institute. In order to properly predict road weather conditions, an accurate precipitation type forecast is essential. During February 2019, we focused on the ECMWF Probability of precipitation type product (ecCharts) aiming to determine its reliability during two selected severe winter situations - heavy snowfall on 3rd February and glaze on 7th February. We monitored how the forecast changed with the shortening lead time and how it reflected the real situation according to surface synoptic observations. The probability forecast was compared with standard deterministic model outputs as well. It seems that the ECMWF Probability of precipitation type product could successfully predict heavy snowfall already 4 days in advance, even before detailed regional model outputs are available. On the other hand, the forecast was not satisfactory in general for the whole region. Although the probability forecast managed to depict the high risk of freezing rain in the northwest Bohemia, the forecast was not accurate in other parts of Bohemia, which could be associated with the lower spatial resolution of the global model. Nevertheless, the probability forecast of the precipitation type has great potential, mainly for early weather warnings for glaze and significant falls of snow, as well as for improving general weather forecasts.

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