



Road weather forecasting – ICEWARN model

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We have developed a new model (ICEWARN) for the forecast of road surface temperature and road surface conditions. The model stems from the Model of the Environment and Temperature of Roads (METRo) developed by the Environment and Climate Change Canada. ICEWARN is linked to measurements of the road weather stations in the area of interest and to forecasts of the numerical weather prediction model ALADIN, which is the operational model of the Czech Hydrometeorological Institute.

ICEWARN is focused on forecasts in urban areas. It differs from the METRo model mainly in the parametrization of radiation fluxes and in the inclusion of sky-view factor for the direct solar irradiance. Besides deterministic forecasts, ICEWARN allows probabilistic forecasting of the road surface temperature based on our ensemble forecast method.

An evaluation of the ICEWARN model forecasts for selected roads in Prague during the winter season 2016/2017 is presented. The probabilistic forecast is performed for the lead times up to 6 hours. The deterministic forecast is computed and evaluated for the lead times up to 24 hours.

The target users of the project output, which are the road maintenance services in the capital city of Prague, will obtain operational information that will enable them, in addition to reducing the weather risks, to make their winter activities as well as the whole Prague transport economically more effective and more environmental-friendly.