

## Determination of Measurement Uncertainty of the Diagnostic Meteorological Model CALMET

**Authors :** Nina Miklavčič, Urška Kugovnik, Natalia Galkina, Primož Ribarič, Rudi Vončina

**Abstract :** Today, the need for weather predictions is deeply rooted in the everyday life of people as well as it is in industry. The forecasts influence final decision-making processes in multiple areas, from agriculture and prevention of natural disasters to air traffic regulations and solutions on a national level for health, security, and economic problems. Namely, in Slovenia, alongside other existing forms of application, weather forecasts are adopted for the prognosis of electrical current transmission through powerlines. Meteorological parameters are one of the key factors which need to be considered in estimations of the reliable supply of electrical energy to consumers. And like for any other measured value, the knowledge about measurement uncertainty is also critical for the secure and reliable supply of energy. The estimation of measurement uncertainty grants us a more accurate interpretation of data, a better quality of the end results, and even a possibility of improvement of weather forecast models. In the article, we focused on the estimation of measurement uncertainty of the diagnostic microscale meteorological model CALMET. For the purposes of our research, we used a network of meteorological stations spread in the area of our interest, which enables a side-by-side comparison of measured meteorological values with the values calculated with the help of CALMET and the measurement uncertainty estimation as a final result.

**Keywords :** uncertainty, meteorological model, meteorological measurement, CALMET

**Conference Title :** ICWFO 2024 : International Conference on Weather Forecasting and Observations

**Conference Location :** Prague, Czechia

**Conference Dates :** September 05-06, 2024