



## **Low visibility now-casting based on statistical methods at Vienna airport**

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Aviation safety and economic efficiency of airports and airlines are strongly affected by weather and natural hazards. One of these weather events is low visibility, primarily affected by fog and low ceiling. Since fog formation processes and low ceiling have large variability due to small physical forcing and rare occurrence, the prediction of such events is challenging. The first step towards an end user forecasting tool for airport decision makers is a regression model that links airport-specific low-visibility classes to the currently (and previously) observed weather conditions. Those classes are closely related to the airport capacity. We propose to employ an ordered logistic regression model, which can provide occurrence probabilities for the low-visibility classes up to several hours into the future. Large data from a variety of source is used in the statistical framework, including time series of in-situ (ordinary weather stations) and remote sensing (e.g. ceilometers) measurements at (and around) Vienna airport.