Forecasting Low-Visibility Conditions at Vienna Airport with Tree-Based Statistical Models

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Low visibility conditions at airports can lead to capacity problems and therefore to delays or cancelation of arriving and departing airplanes. To keep the capacity as high as possible, accurate visibility forecasts are required. Therefore tree-based statistical nowcasting models were developed, which split the data in the sense of decision rules by recursive partitioning. Benefits of this models are fast update cycles and low computation times. Highly-resolved meteorological observation data at the airport form the large pool of input variables for the models. In this study we identify the most important predictors for different lead times to create the most accurate forecasts.