



## **Application of Model Output Statistics technique to a high resolution air quality forecast**

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The skill score of a high resolution air quality forecast depends to a large extent on the sub-grid variability of the input parameters describing surface properties. In urban areas, at a given resolution one cannot sufficiently describe the sub-grid spatial variability of emission fluxes and urban structure. In the case of towns located in complex terrain there is also a problem with representation of orography, surface fluxes and wind direction.

Model Output Statistics (MOS) is a standard technique used in meteorological forecast, which combines numerical forecast with statistical post-processing of the results. This technique improves the forecast accuracy for selected locations, as it accounts for site-specific local variation.

Although in the past the statistical methods were quite popular in air quality forecasting, the MOS technique is used rarely.

We will present the application of MOS for PM<sub>10</sub> concentration predicted with semi-operational high resolution air quality forecasting system EcoForecast.EU. Two sites were selected: Krakow agglomeration and Zakopane, located at the foothills of the Tatra Mountains. MOS forecast is treated as a function of modelled PM<sub>10</sub> and some selected modelled meteorological parameters. The multiple regression was used to establish the relationship between PM<sub>10</sub> and the predictors chosen for the analysis.