



A new statistical approach to improve air quality forecasts in the framework of CITEAIR and PREV'AIR

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The PREV'AIR system (<http://www.prevair.org>) was implemented in 2003 with the aim of generating and publishing daily air quality forecasts and maps resulting from numerical simulations on different spatial scales. The operational air quality monitoring system has been constantly evaluated against measurements and improved with geostatistical analysis of the simulations.

In this presentation, we present the new tools implemented in Prev'Air system based on a statistical adaptation approach developed in CITEAIR2 project to locally predict concentrations. The idea is to benefit both from past large scale CHIMERE forecast and from past local measurement database. Multilinear regression functions with both quantitative and qualitative variables are calculated with past database to predict concentrations at urban stations. The predicted concentrations are finally combined with the analysis process to make the best statistical adaptation forecast map.

For operational implementation in Prev'Air system, past forecasts and measurement database for year 2010 are used during the learning process to build the statistical functions. These statistical functions are validated against data for year 2009 and implemented for real time application in summer 2011. The statistical adaptation forecast presents better scores than the raw forecast during validation process.