Driving R to the air quality industry. NanoEnvi Analyst: a tool for designing large-scale air quality plans for improvement in ambient air quality

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The importance of monitoring and controlling air pollution in both outdoor and indoor environments is well established in both the literature and in legislation, especially for urban areas. Air pollutants have harmful effects on the environment and living organisms. In many countries, air pollutant concentrations are still above the legal and recommended limits that are set to protect the health of European citizens. The year 2013 will be the Year of Air and the European Commission is preparing a review of EU air legislation [Age11]. The EU DIRECTIVE 2008/50/EC on ambient air quality and cleaner air [Uni08] for Europe establish that air quality plans should be developed for zones and agglomerations within which concentrations of pollutants in ambient air exceed the relevant air quality target values or limit values.

In this work, we present an intensive use of R and more concretely package openair [CR11] as a tool for developing air quality plans. In particular the air quality plan presented here is focused on particulate matter called PM\textsubscript{10} what is one of the most air quality concern in Europe now. Package openair lead out to analyse long historical time series of air pollution data coming from a large urban region somewhere [pri]. Long historical series of data have the inconvenience of they are very difficult to analyze for several reasons. Perhaps, some of these reasons are: first, air pollution data is a data extremely correlated in time and second, air pollution data is a complex data which require a very optimized visualization tools to carry out even the simplest analysis. This work presents a clear example of how R meets the demands and requirements of modern data-driven businesses. In this sense, Envira company shows here a real case study on the air quality industry where NanoEnvi Analyst (NEA) offers our customers an intelligent data-mining tool for air quality data interpretation. NEA facilitates decision-making and the development of effective strategies for air pollution mitigation.

References

[pri] private. To preserve the confidentiality of the source of the data we will keep the location anon- imus.