

Using *R* for air quality data analysis: A tool for designing improved large-scale air pollution prevention programs

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Emissions of air pollutants derive from almost all economic and societal activities. The majority of greenhouse gas emissions (GHG), acidifying substances, tropospheric ozone precursor emissions and material input caused by the life-cycles of activities related to consumption can be allocated to the main consumption areas of eating and drinking, housing and infrastructures, and mobility [Age11].

In this work, we present an intensive use of *R* and more concretely package **openair** [CR11]. 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. Therefore, much of the data available is only briefly analysed; perhaps with the aim of comparing pollutant concentrations with national and international air quality limits. Package **openair**, thanks to the specific functions, helps us to overcome some of these barriers.

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References

[Age11] EEA (European Environment Agency). Soer2010. <http://www.eea.europa.eu/soer>, 2011.

[CR11] David Carslaw and Karl Ropkins. *openair: Open-source tools for the analysis of air pollution data*, 2011. R package version 0.4-0.

[pri] private. To preserve the confindenciality of the data source we will keep the location anonymous.