Supplementary Material

(*Assessment and comparison of multi-annual size profiles of particulate matter monitored near a steel plant by an Optical Particle Counter by a chemometric approach*

by Sabina Licen, Sergio Cozzutto, Pierluigi Barbieri)

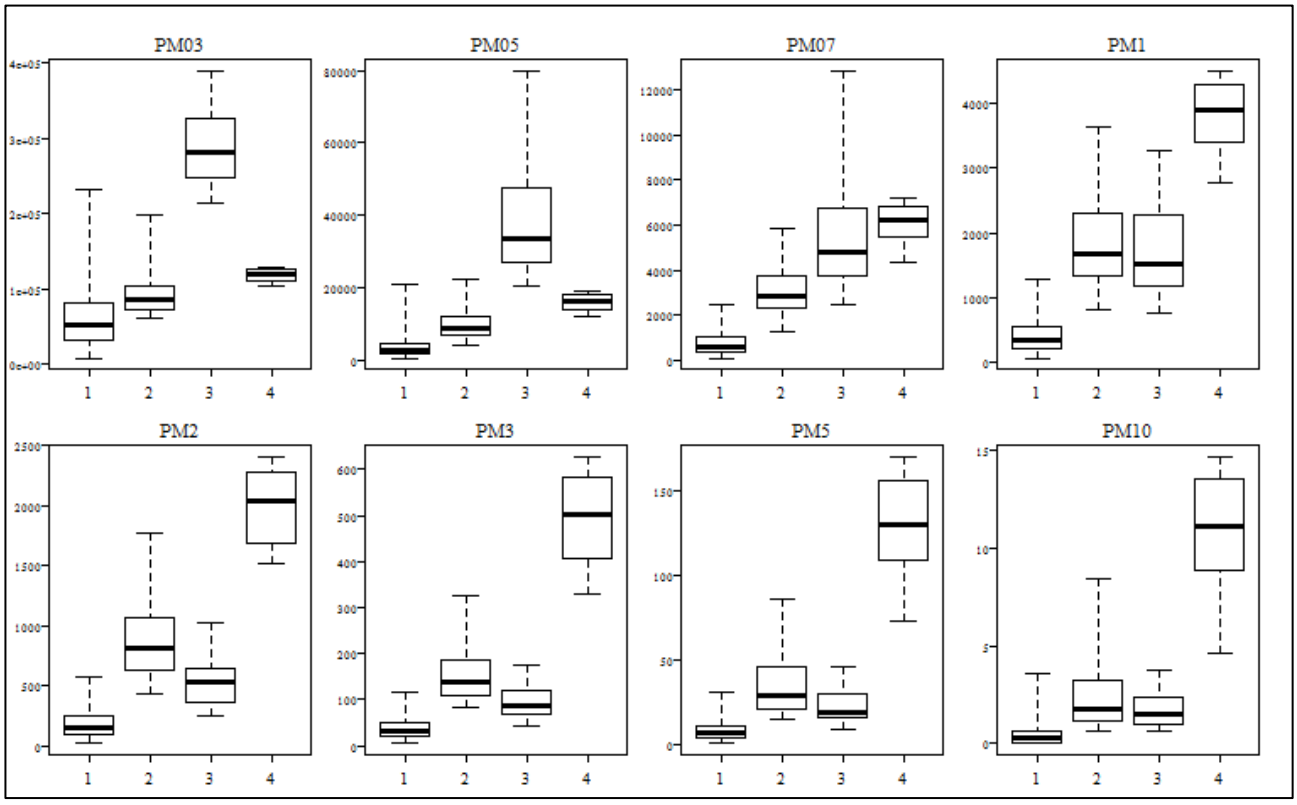
pp S3-S4 : Boxplot of each modeled variable split by cluster shown without normalization of the channel counts

pp S5-S16 : Variation of PM channel counts for each year by hour of the day, day of the week and month, obtained using timeVariation function present in openair package. The plots also show the 95% confidence intervals in the mean.

pp S17 : Daily trajectory animation (instructions and explanation)

Boxplot of each modeled variable split by cluster shown without normalization of the channel counts

YEAR 2014



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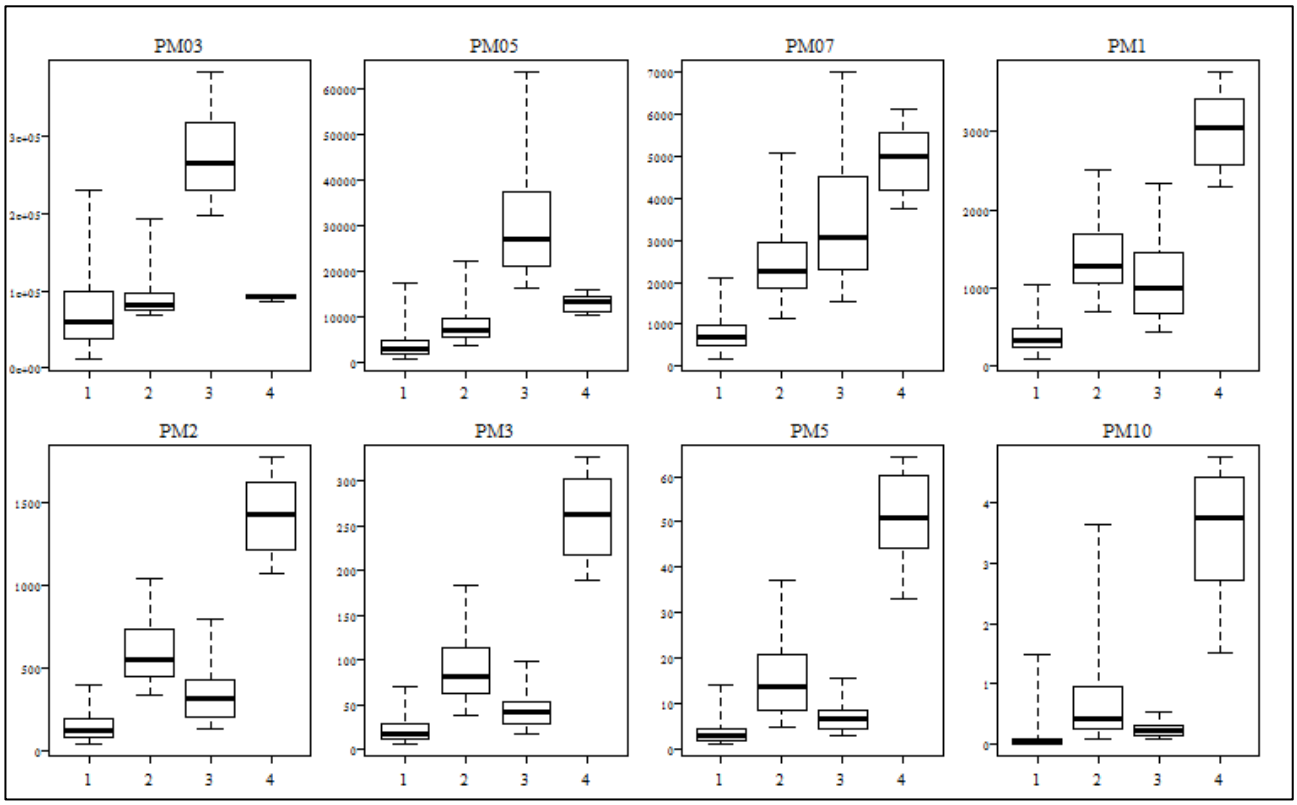
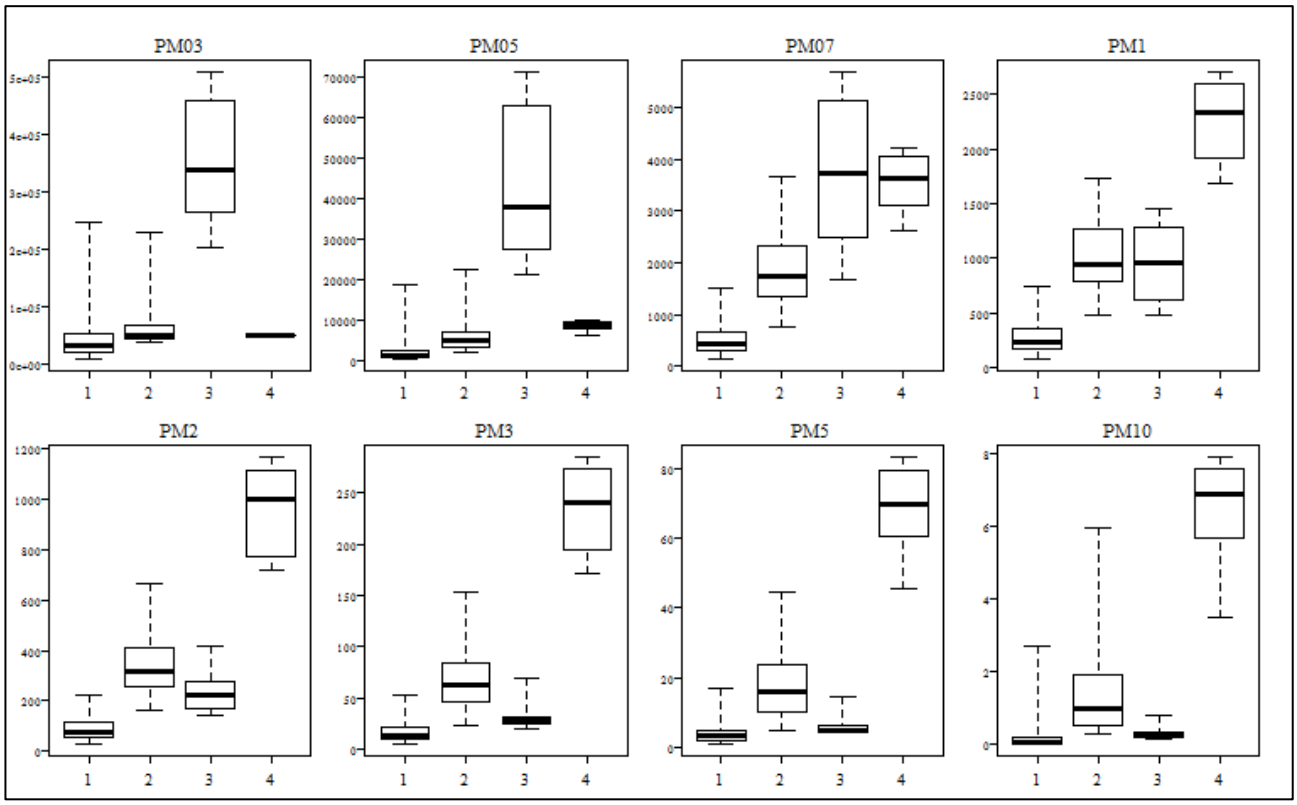
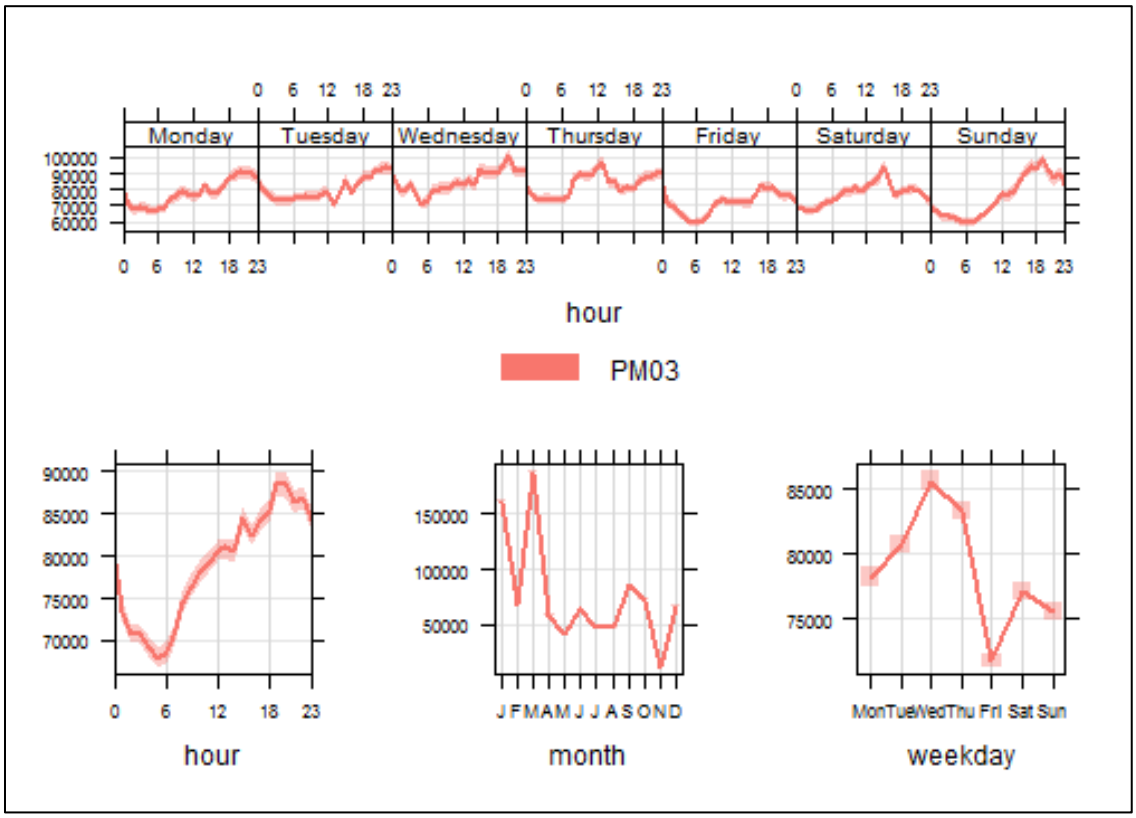


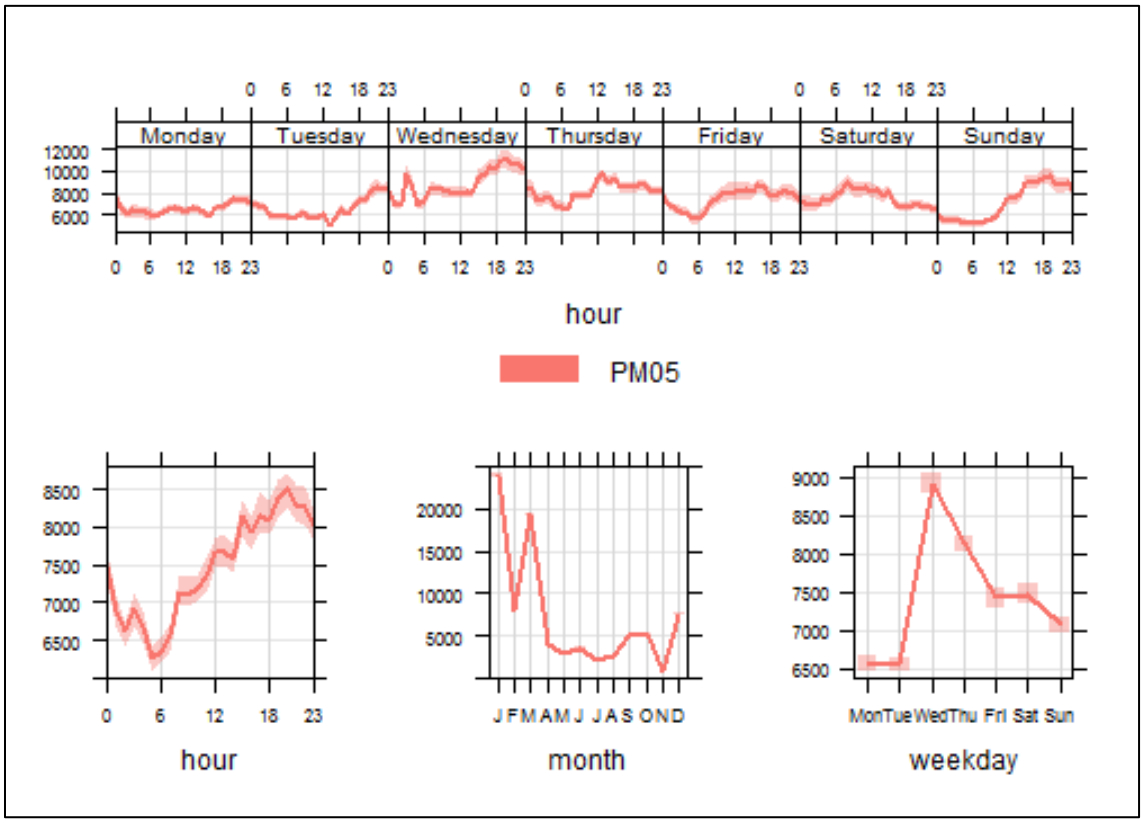
YEAR 2016

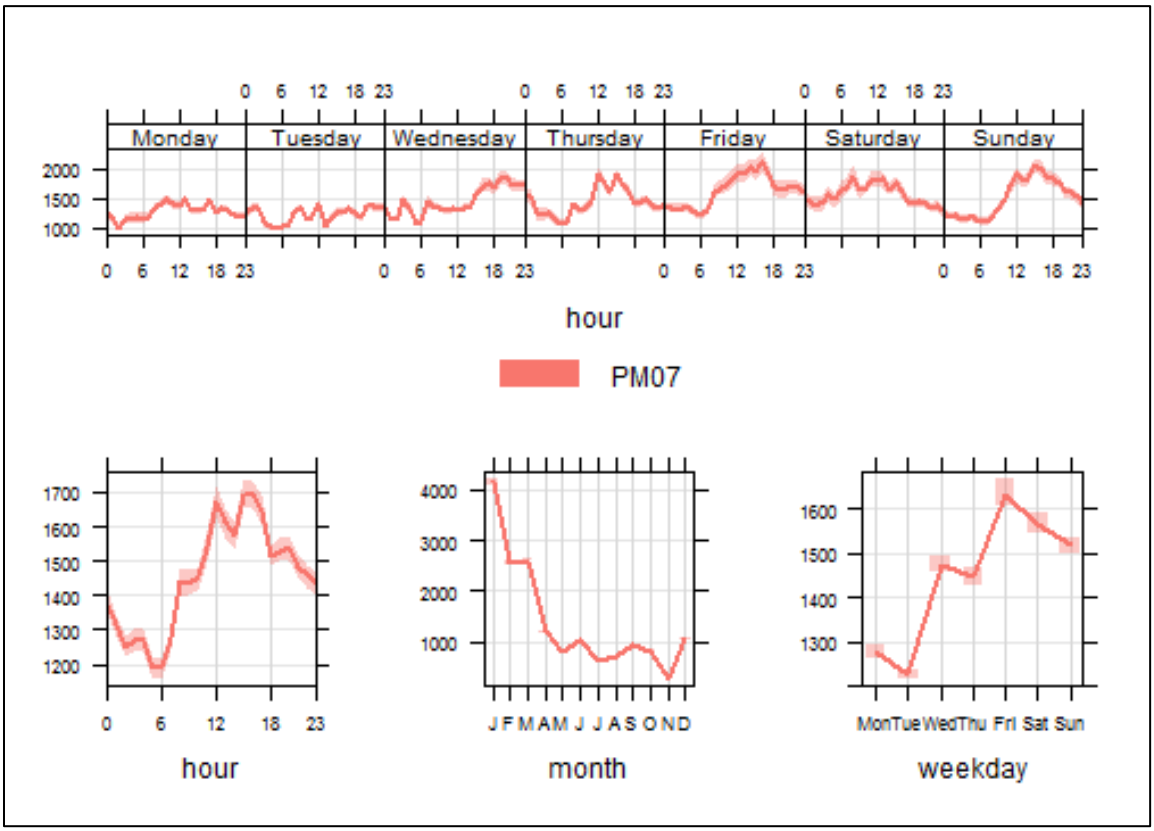


Variation of PM channel counts for each year by hour of the day, day of the week and month, obtained using timeVariation function present in openair package. The plots also show the 95% confidence intervals in the mean.

YEAR 2014



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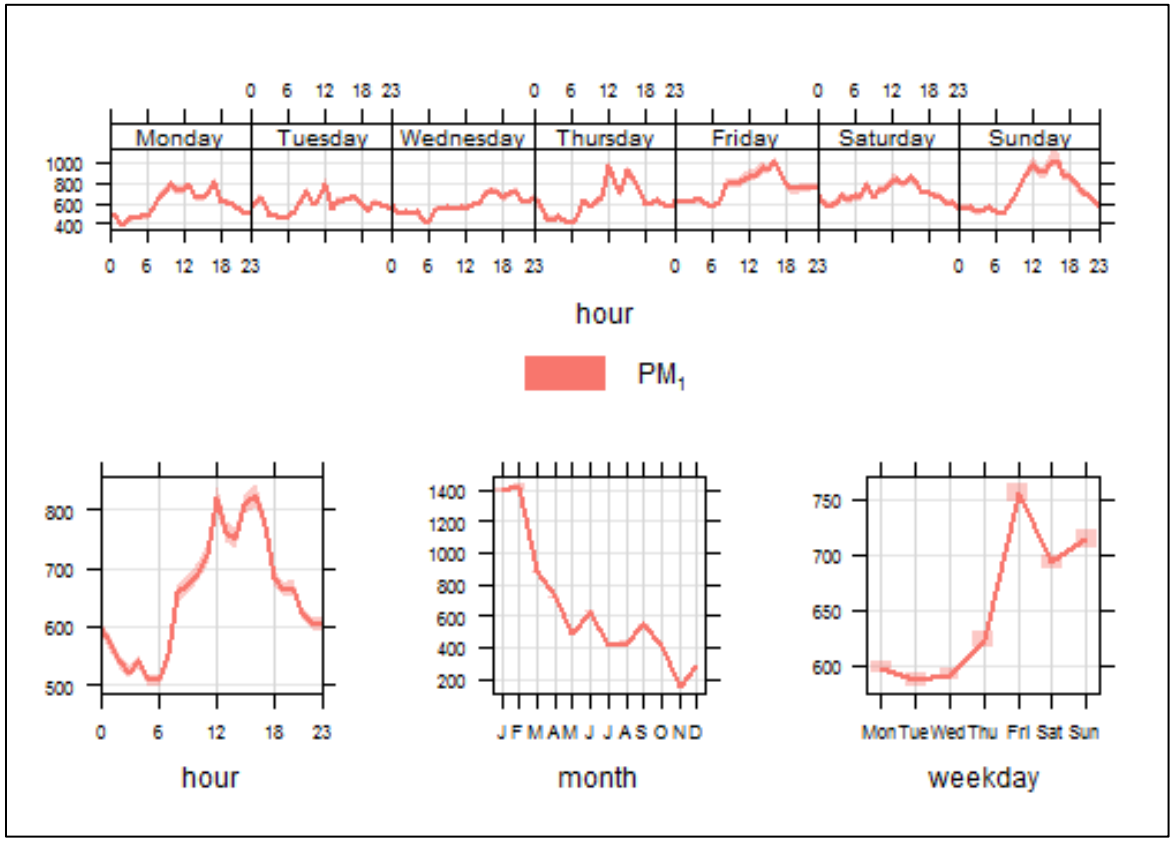
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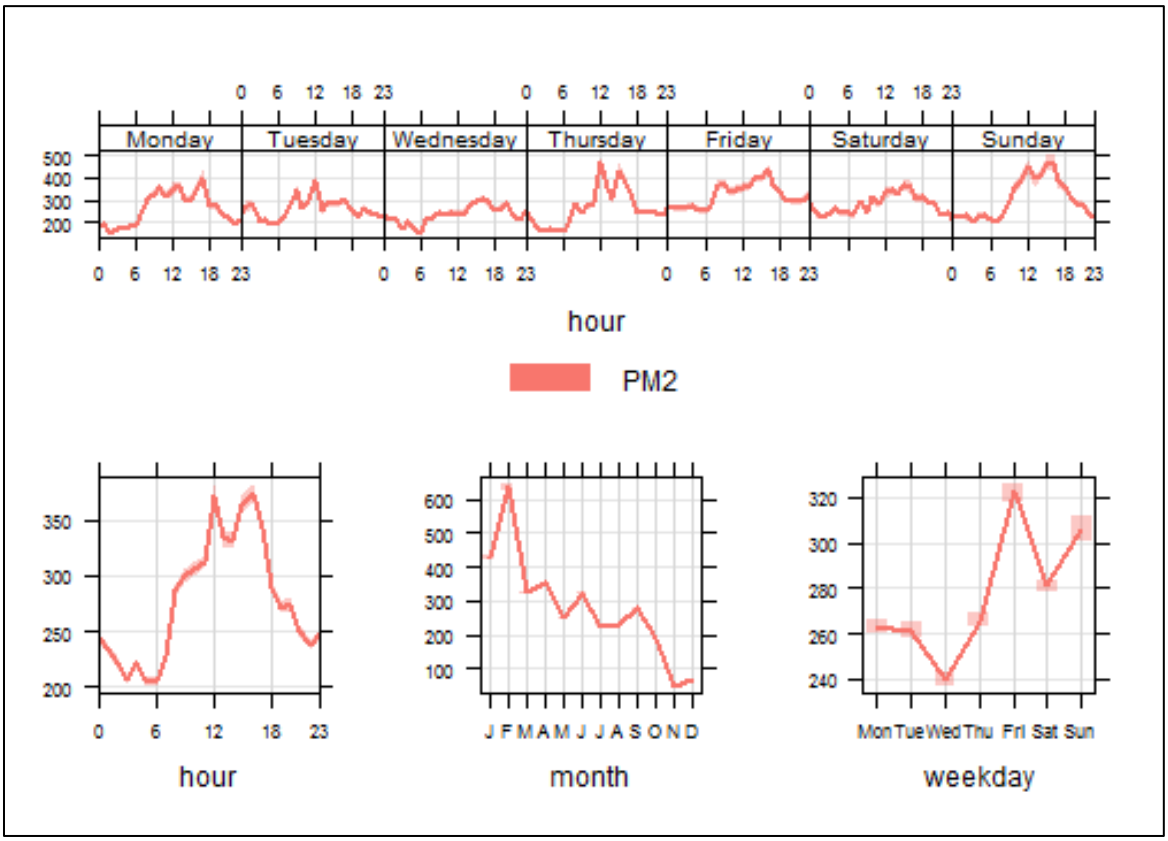
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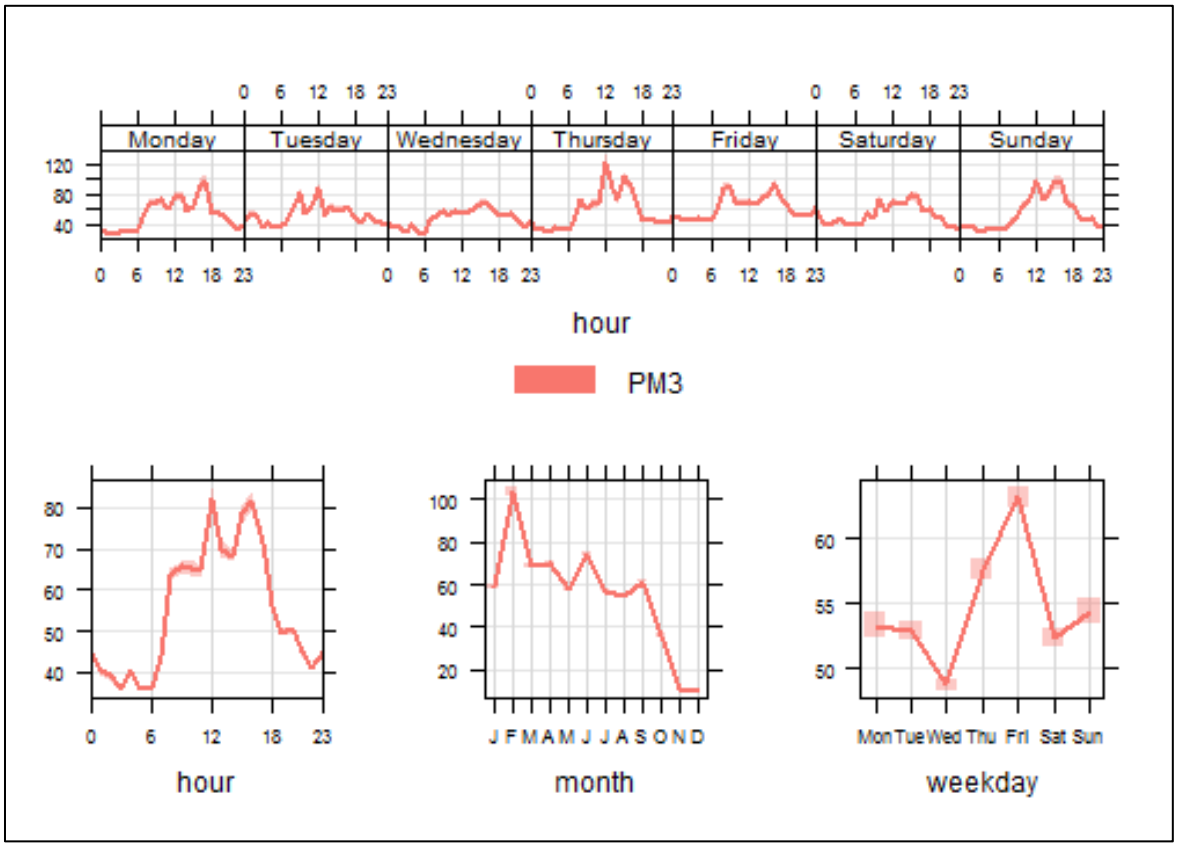
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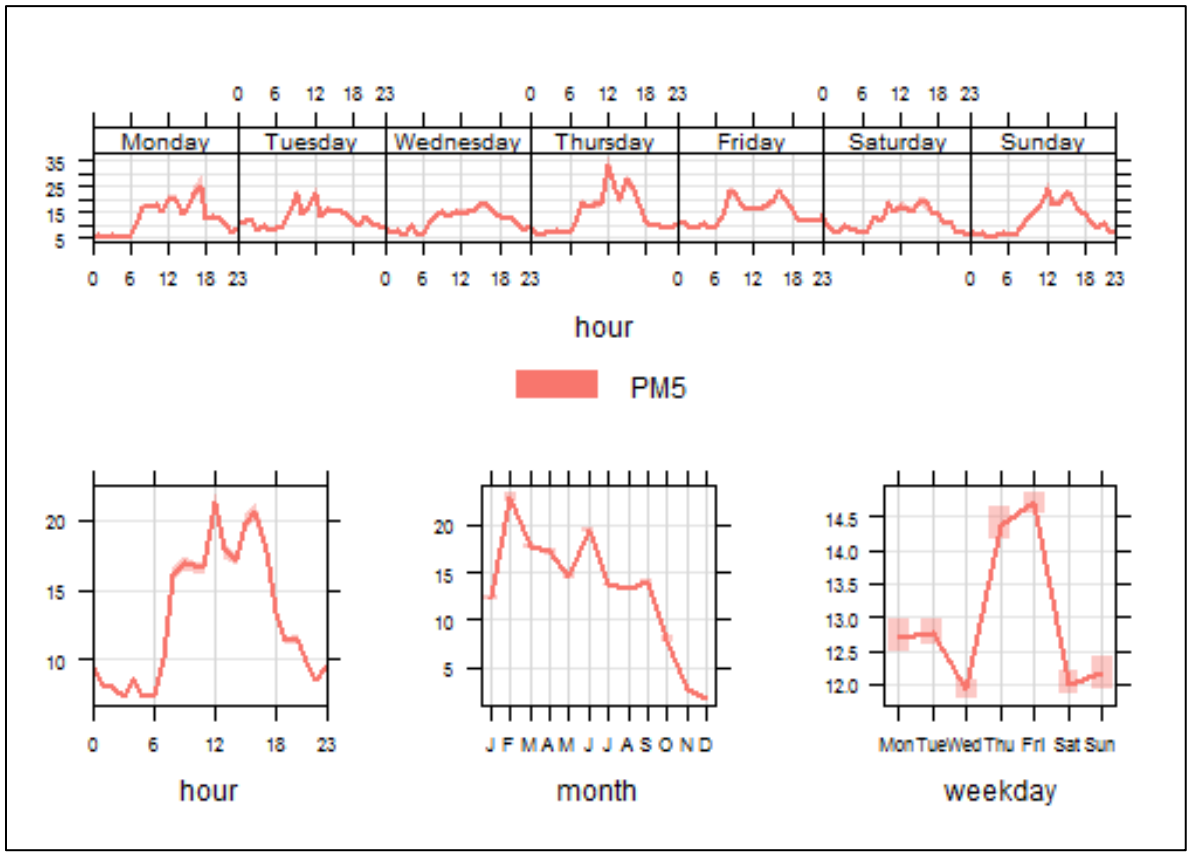
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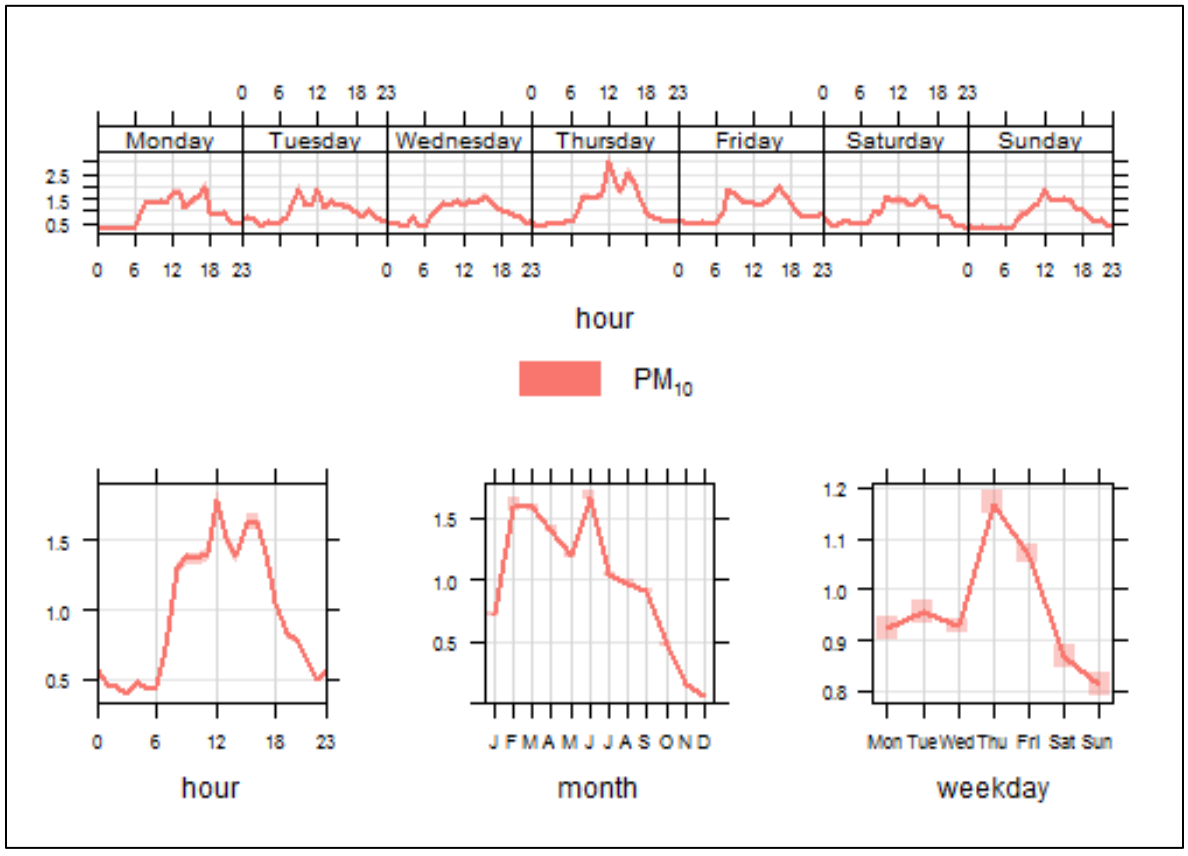
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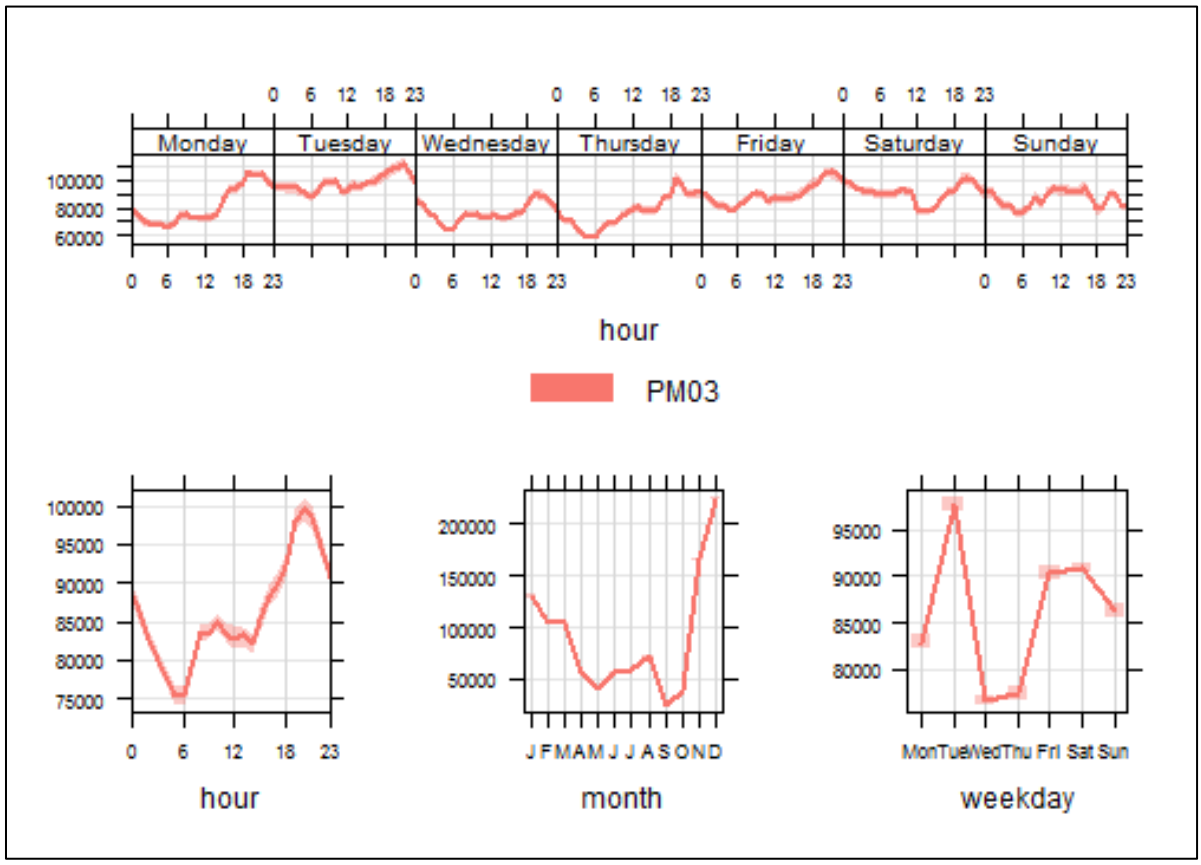
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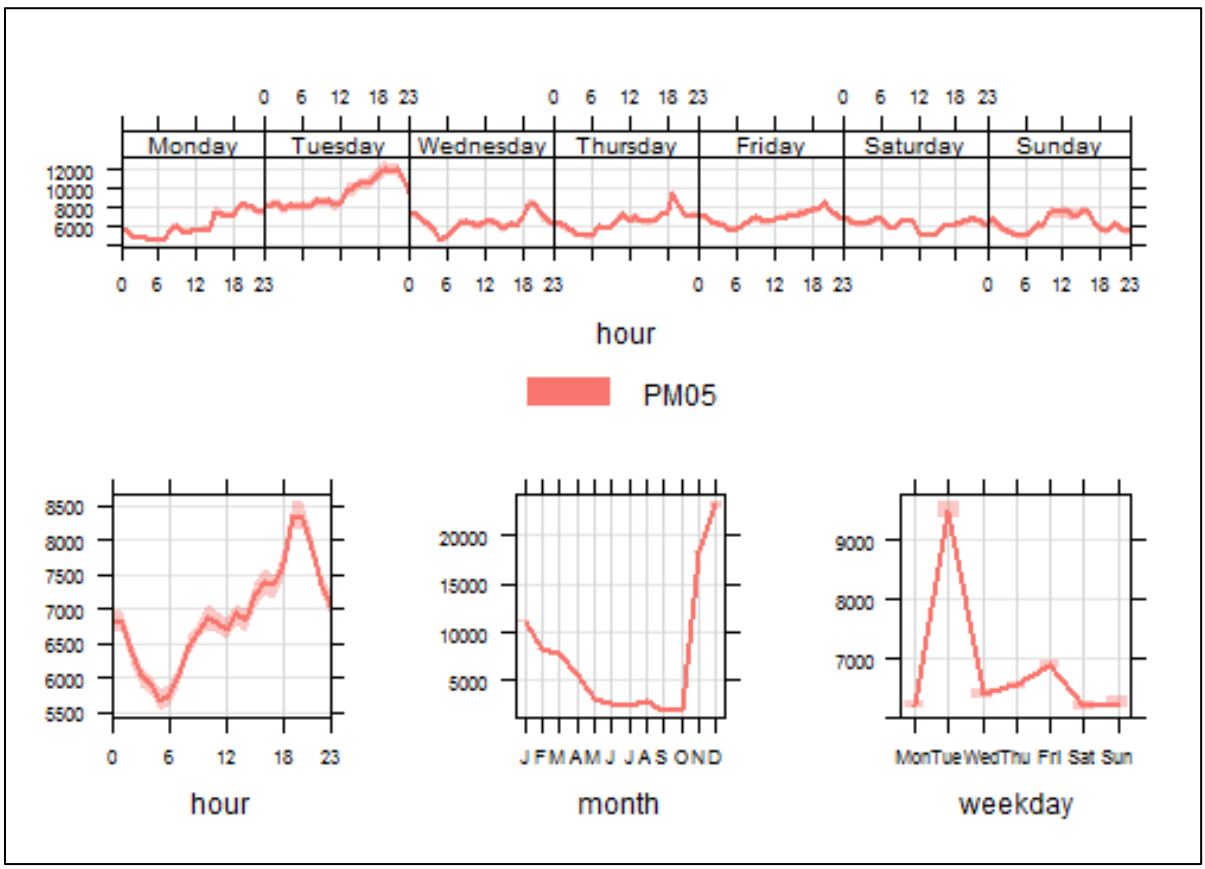
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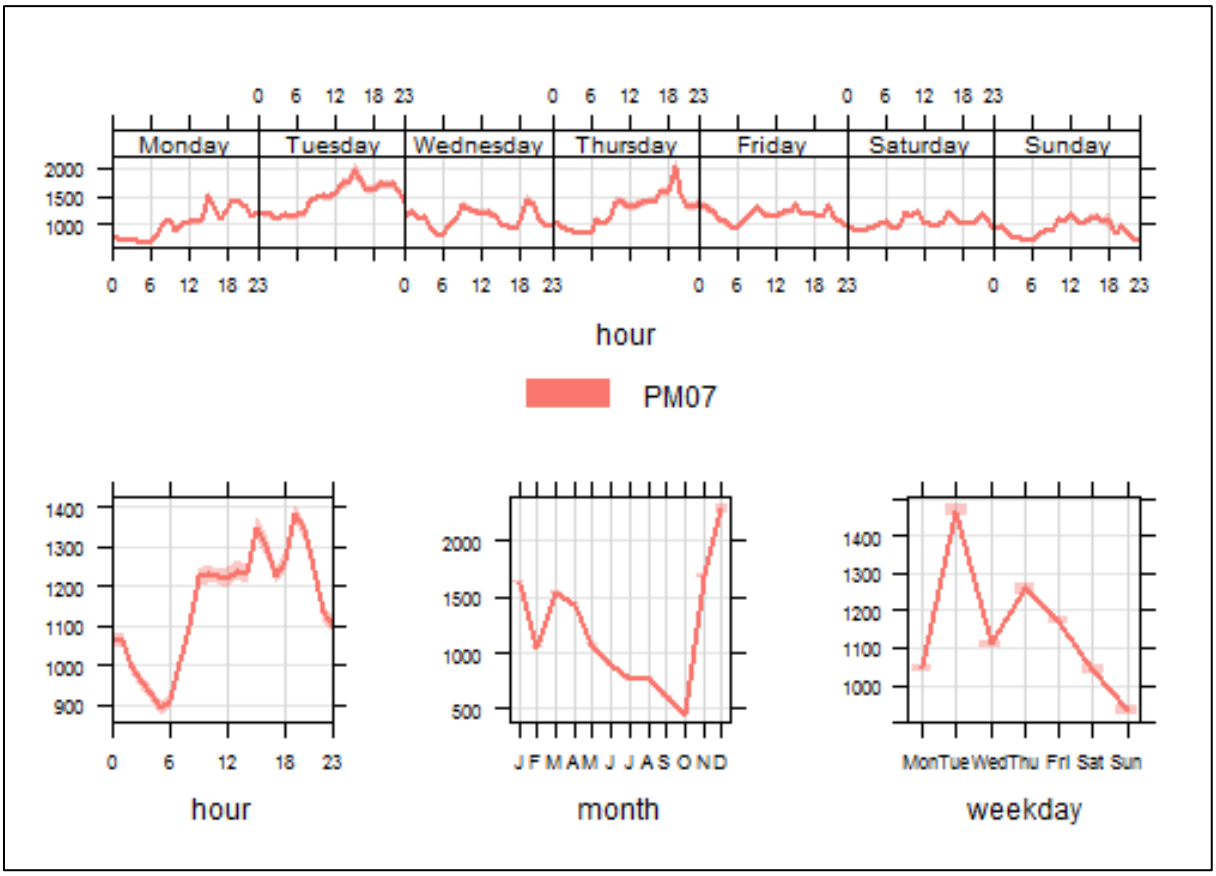
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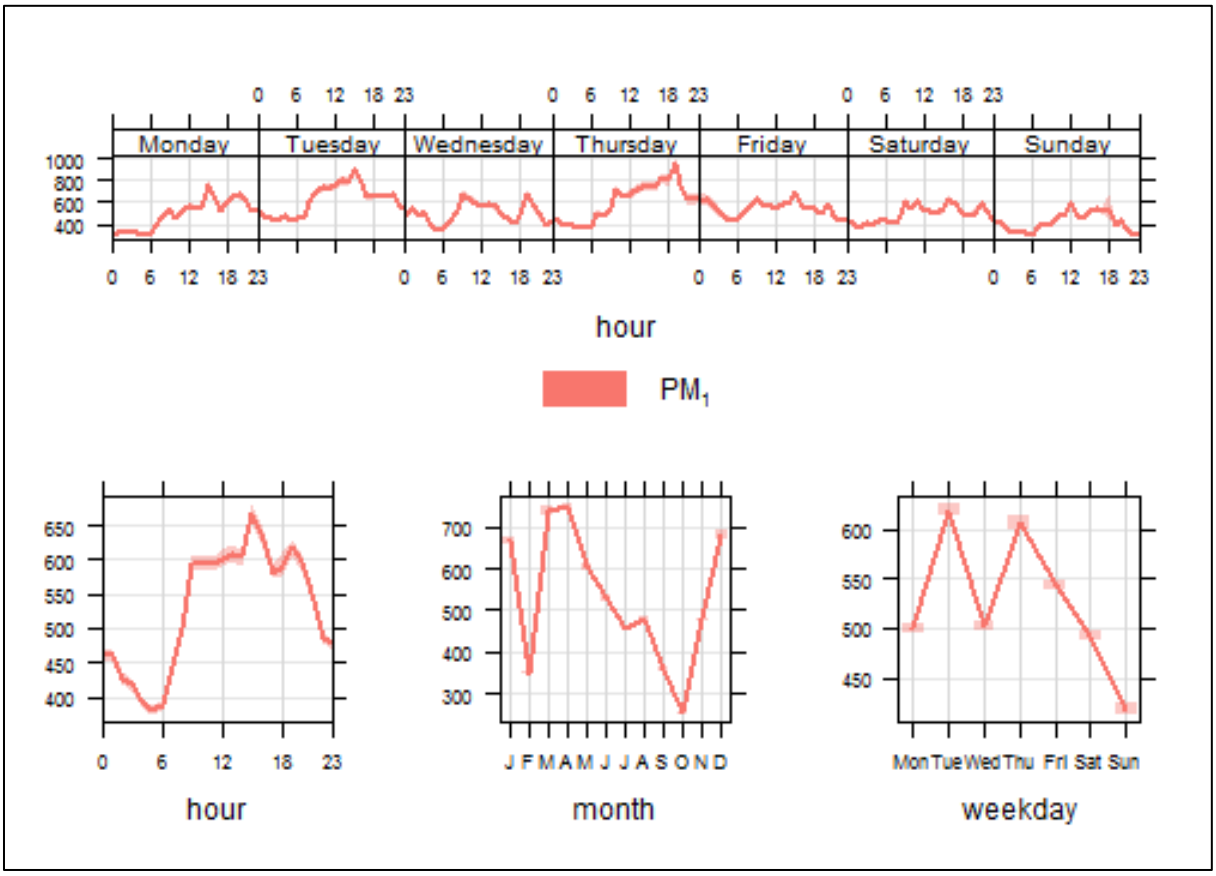
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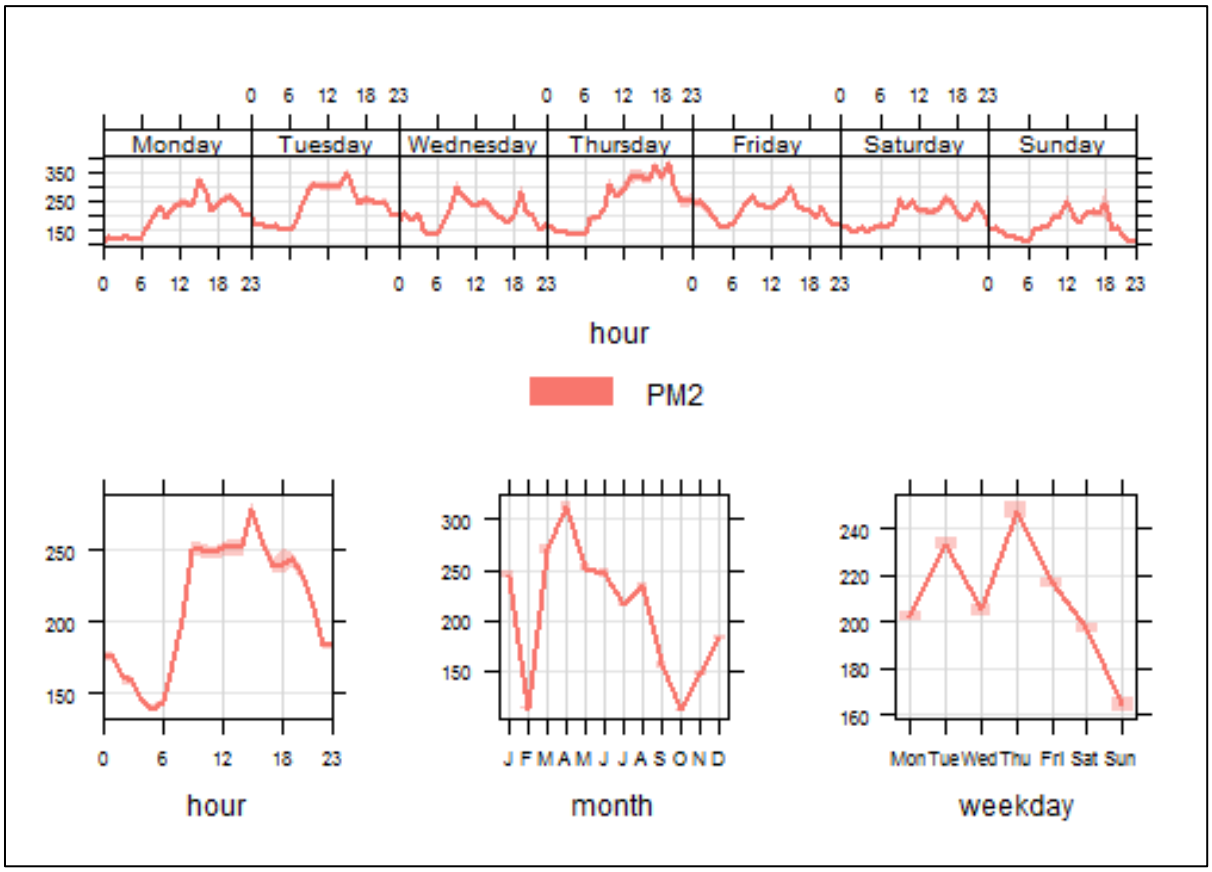
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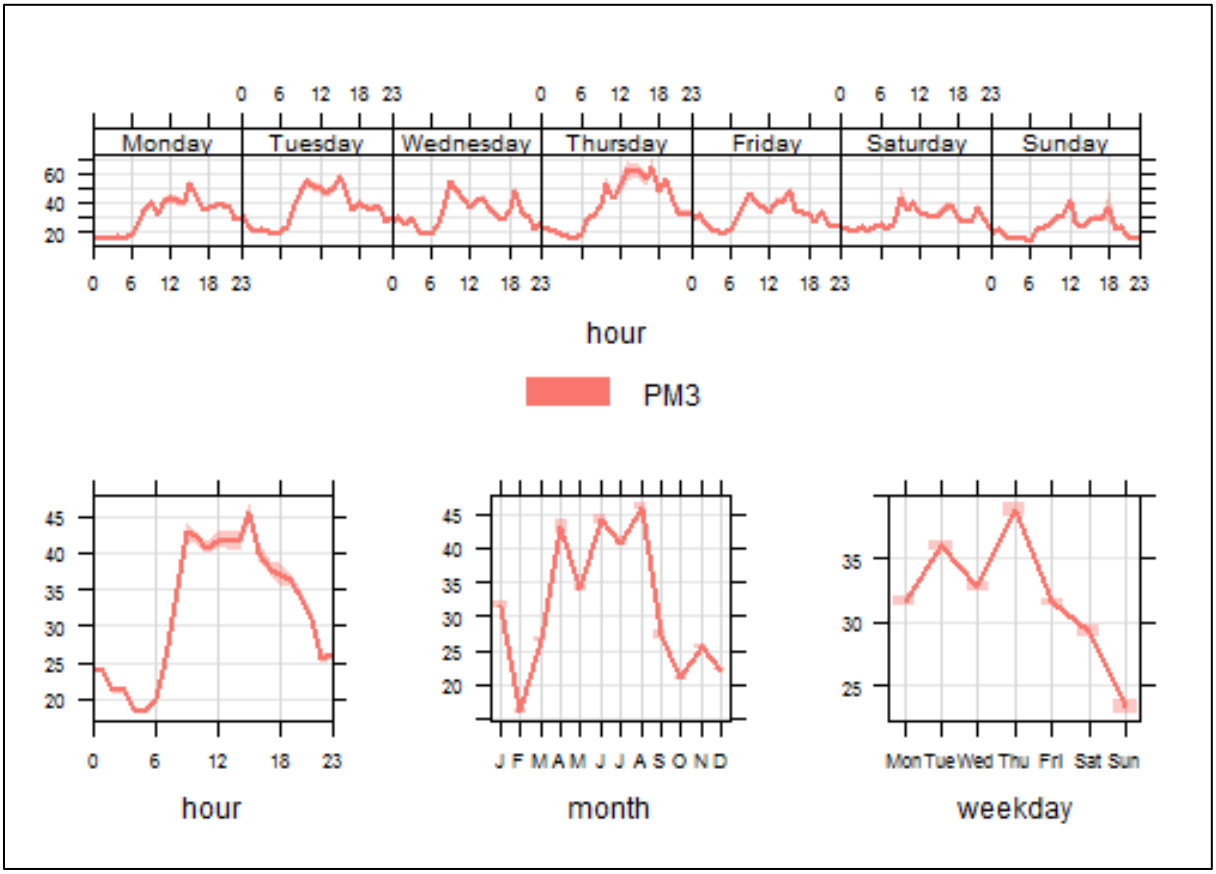
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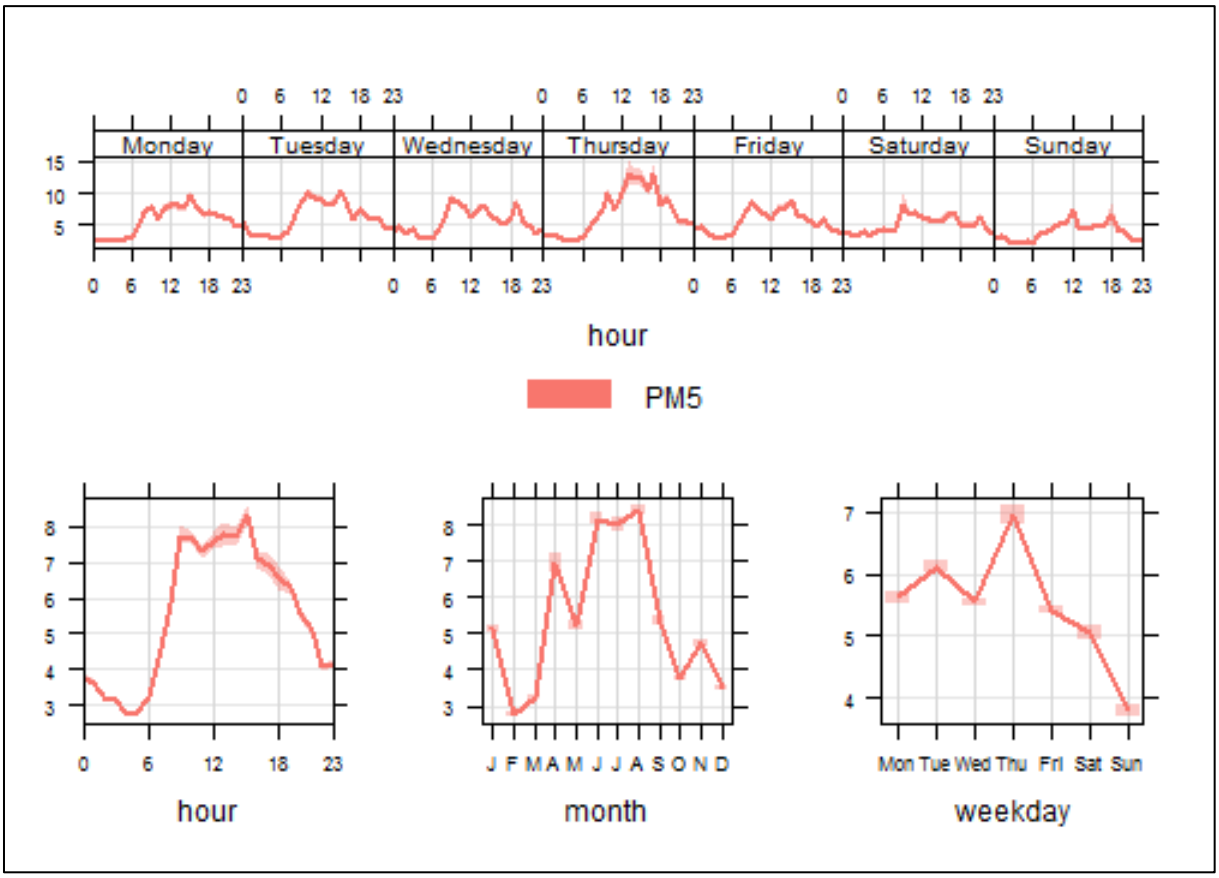
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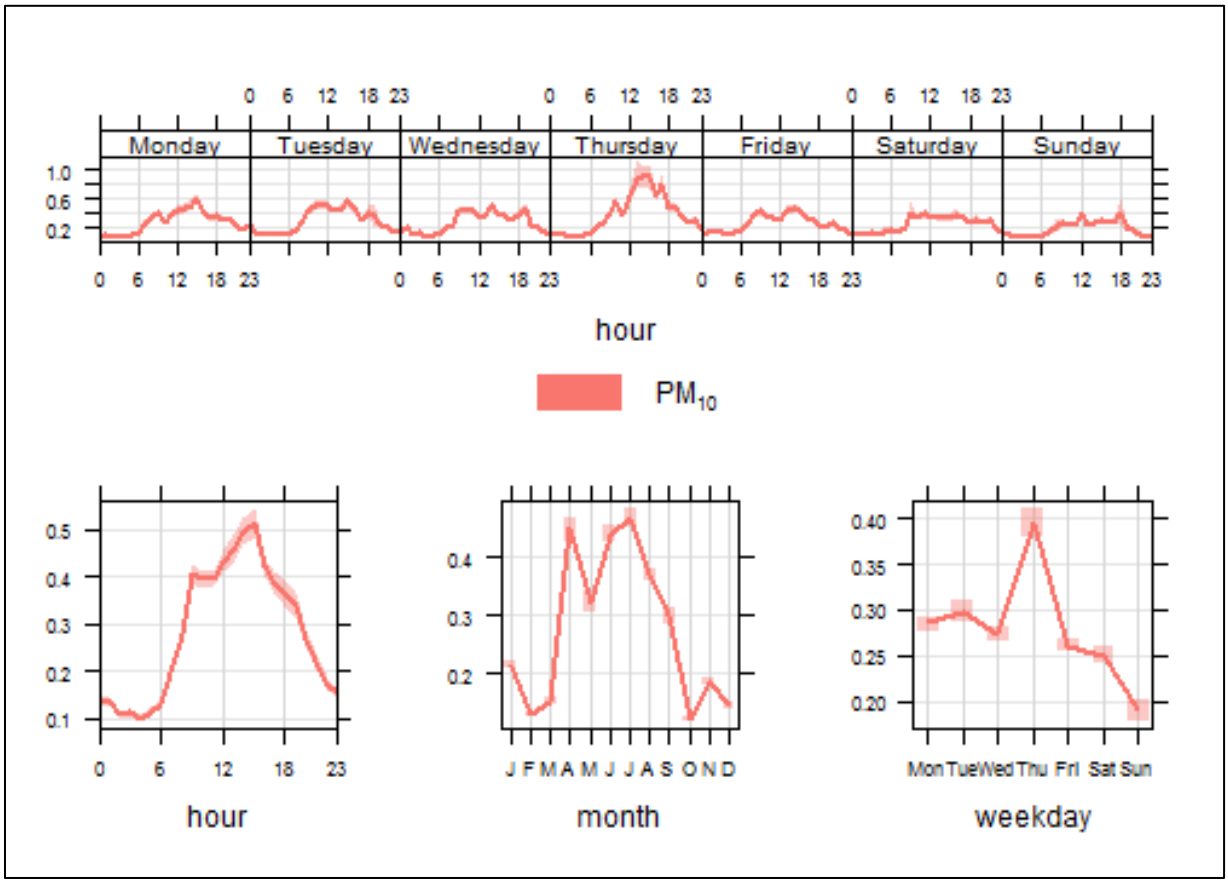
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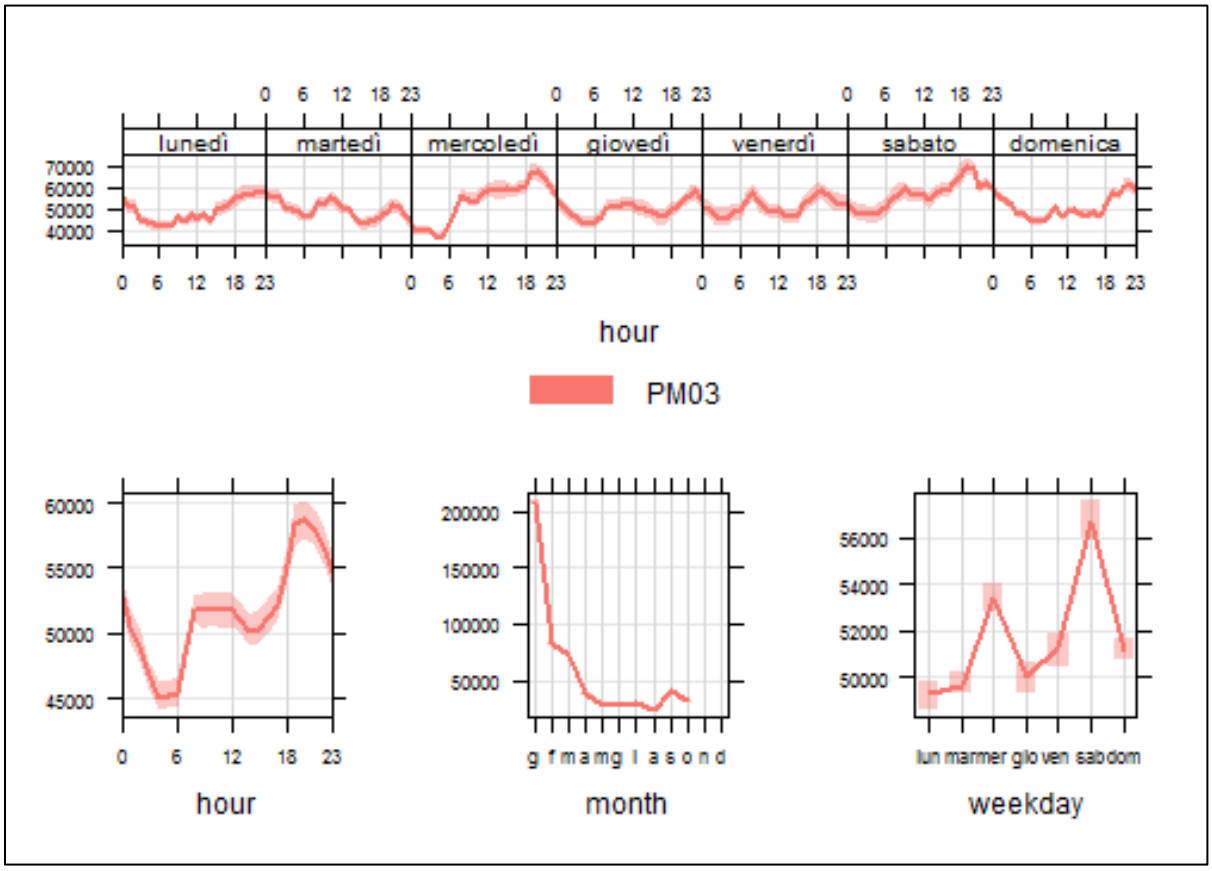
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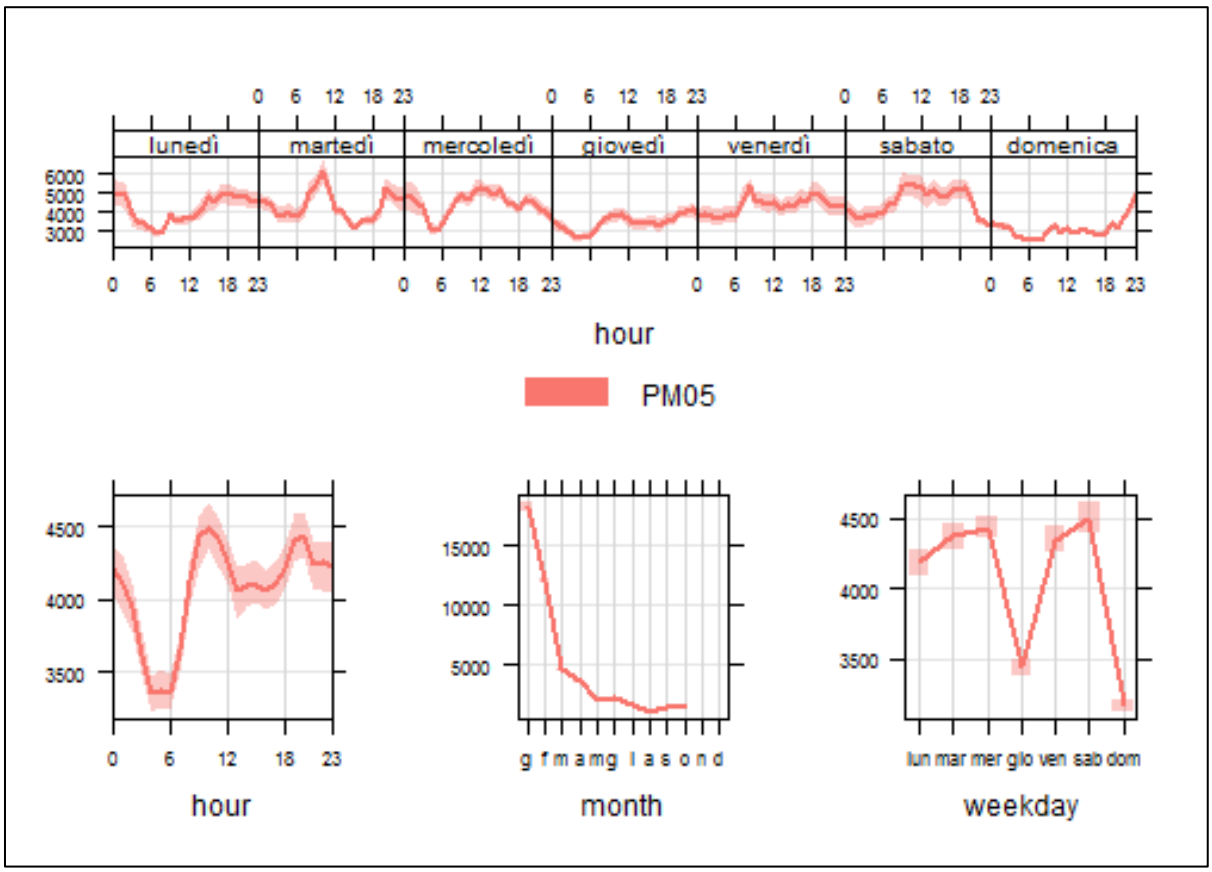
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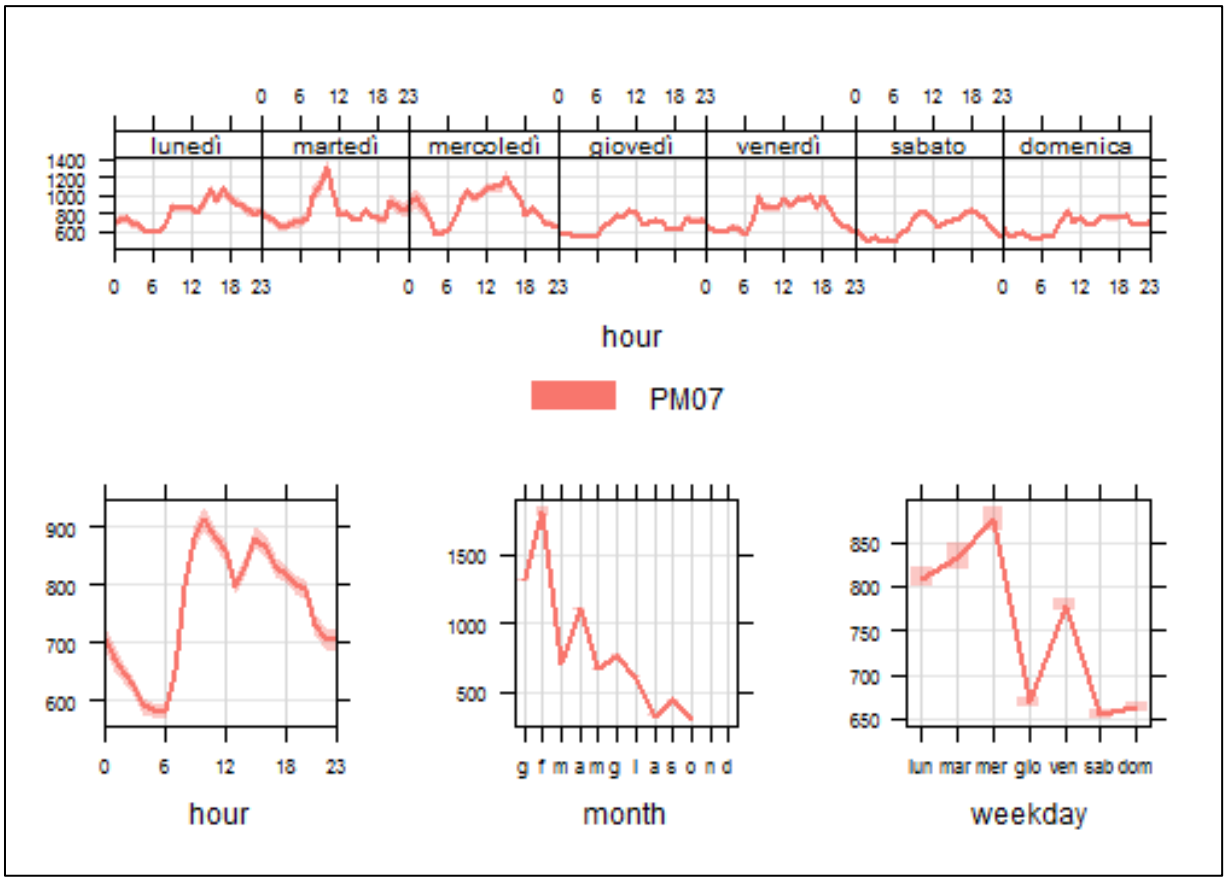
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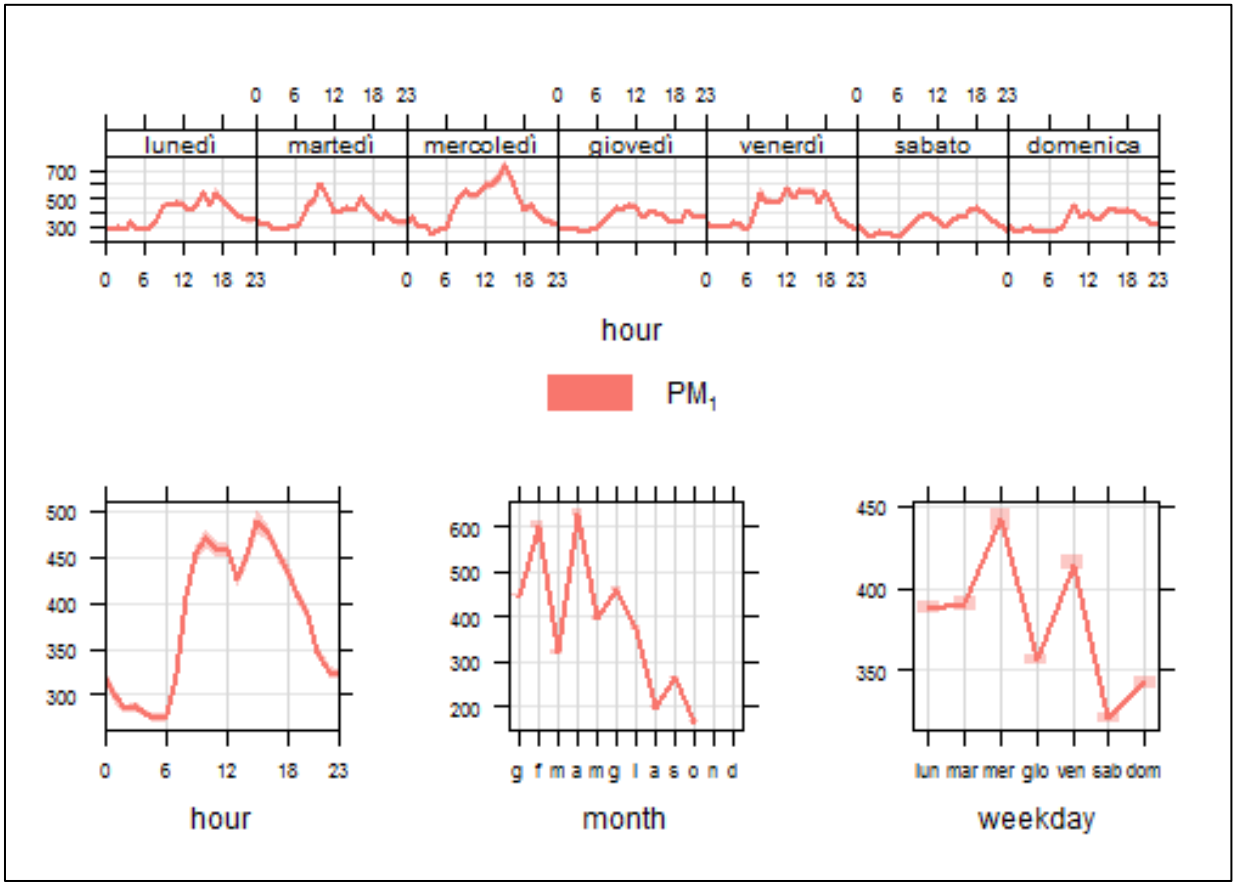
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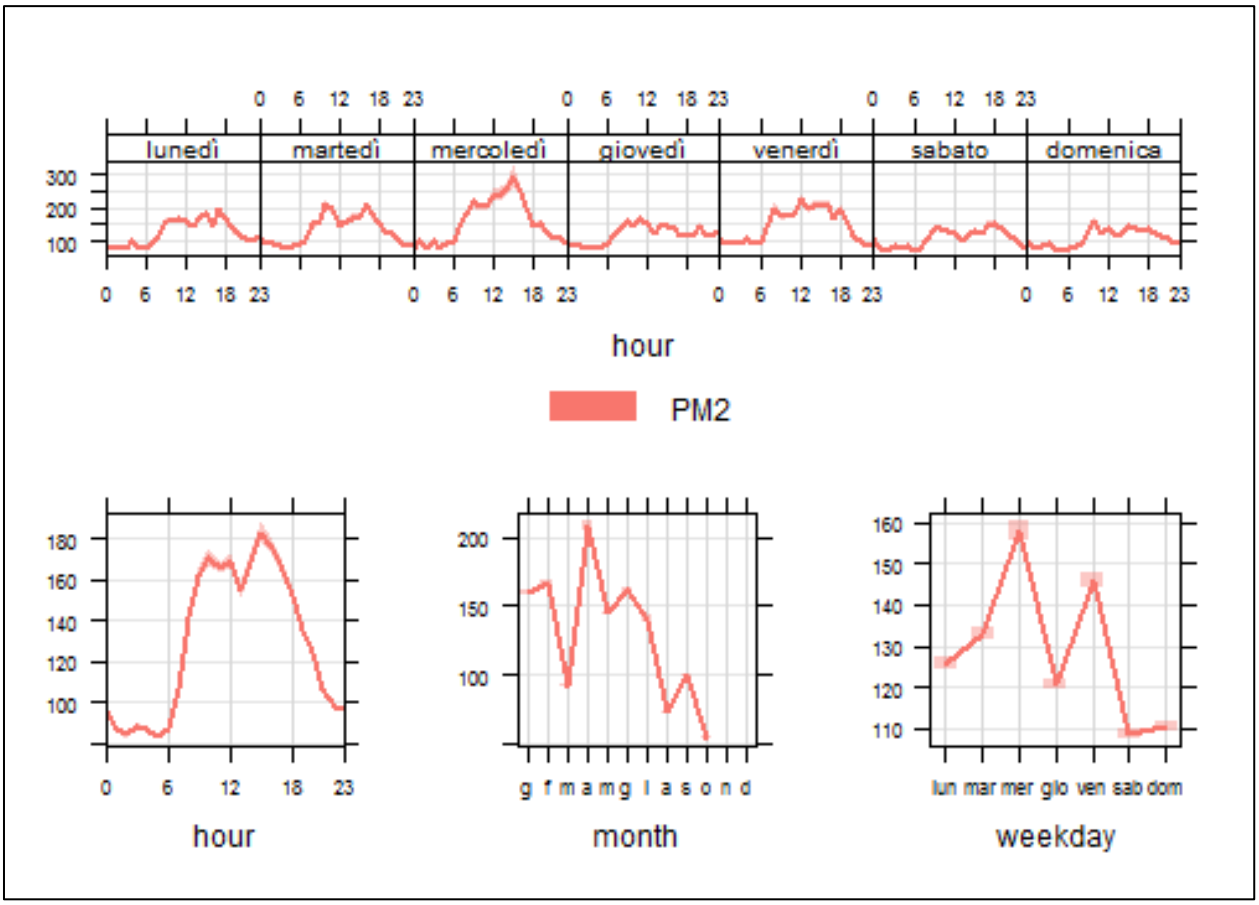
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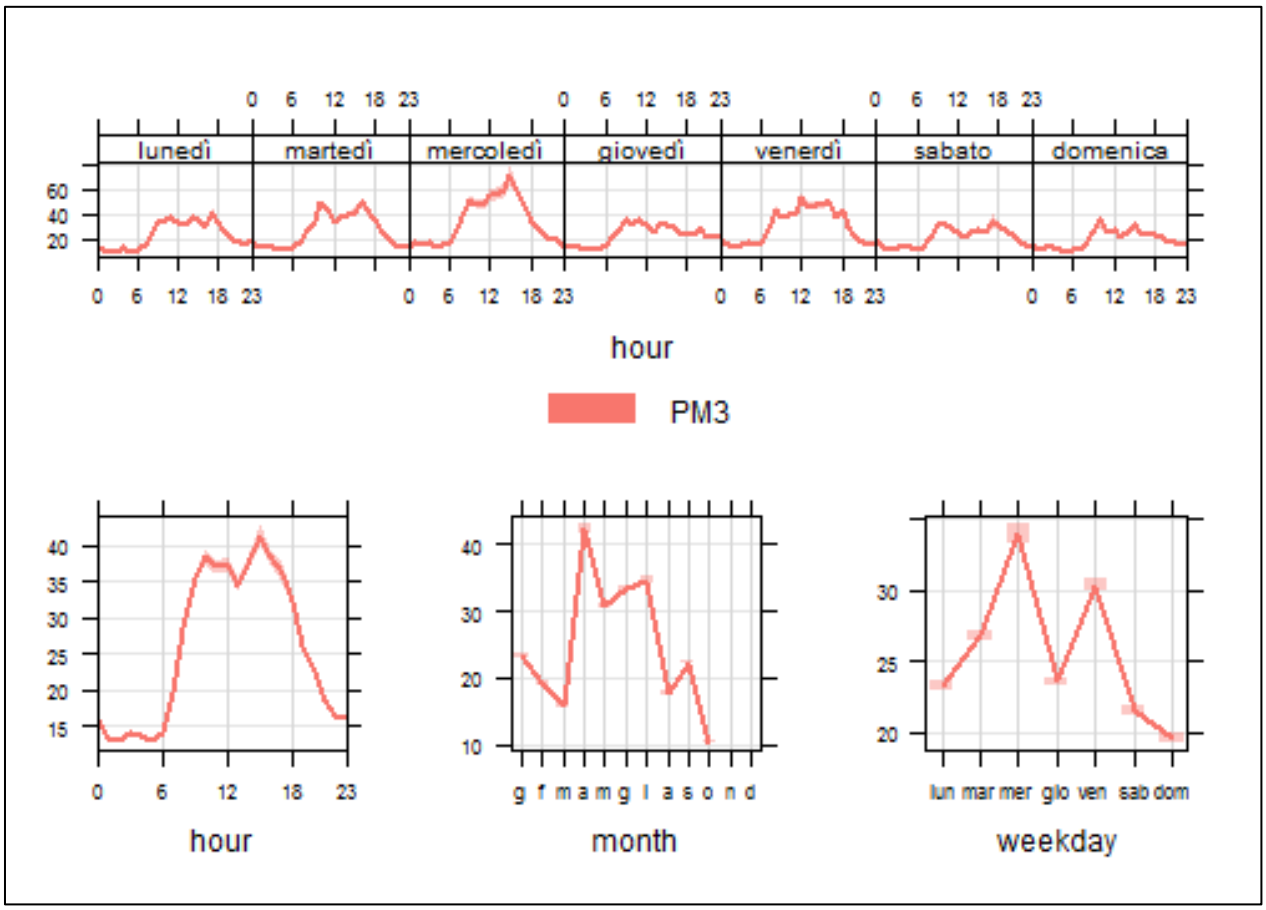
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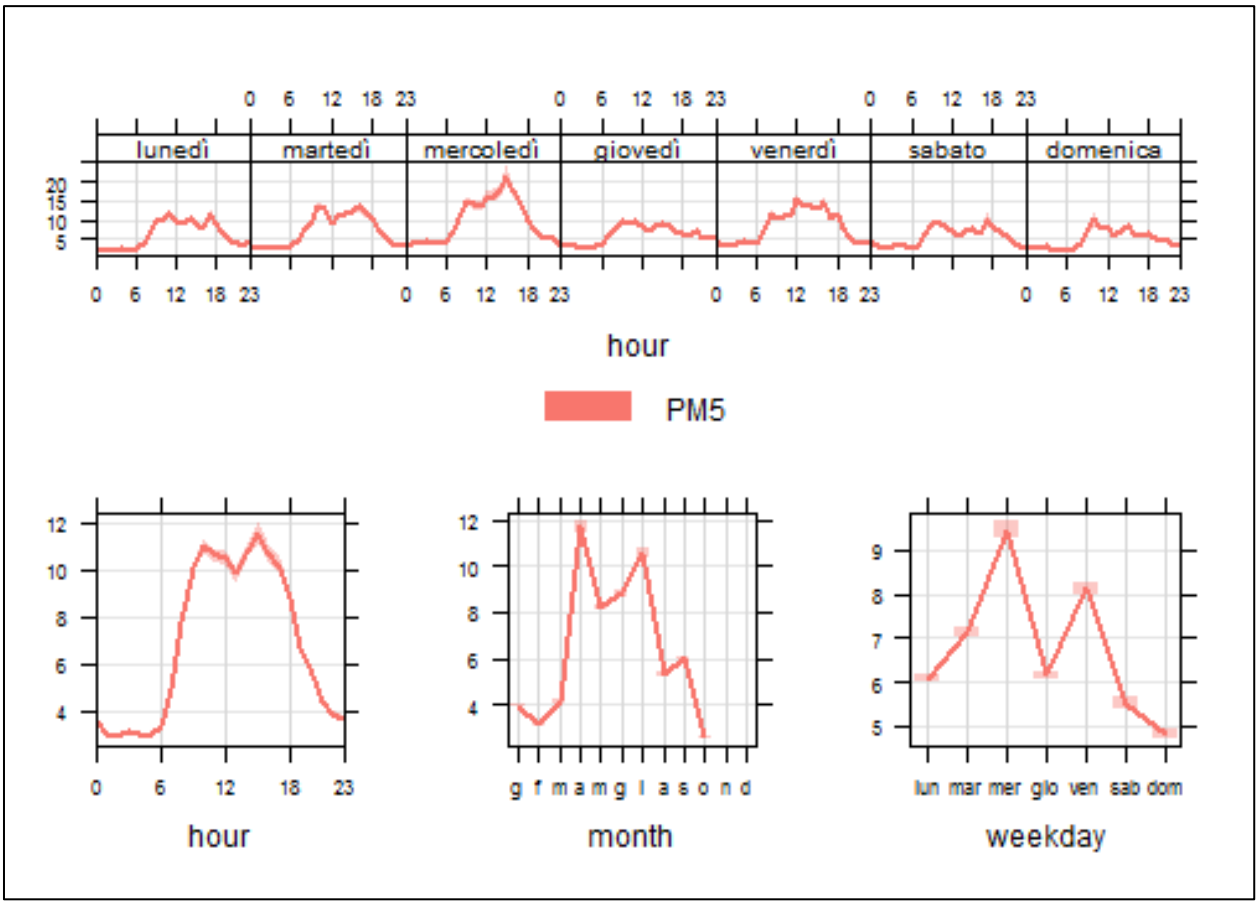
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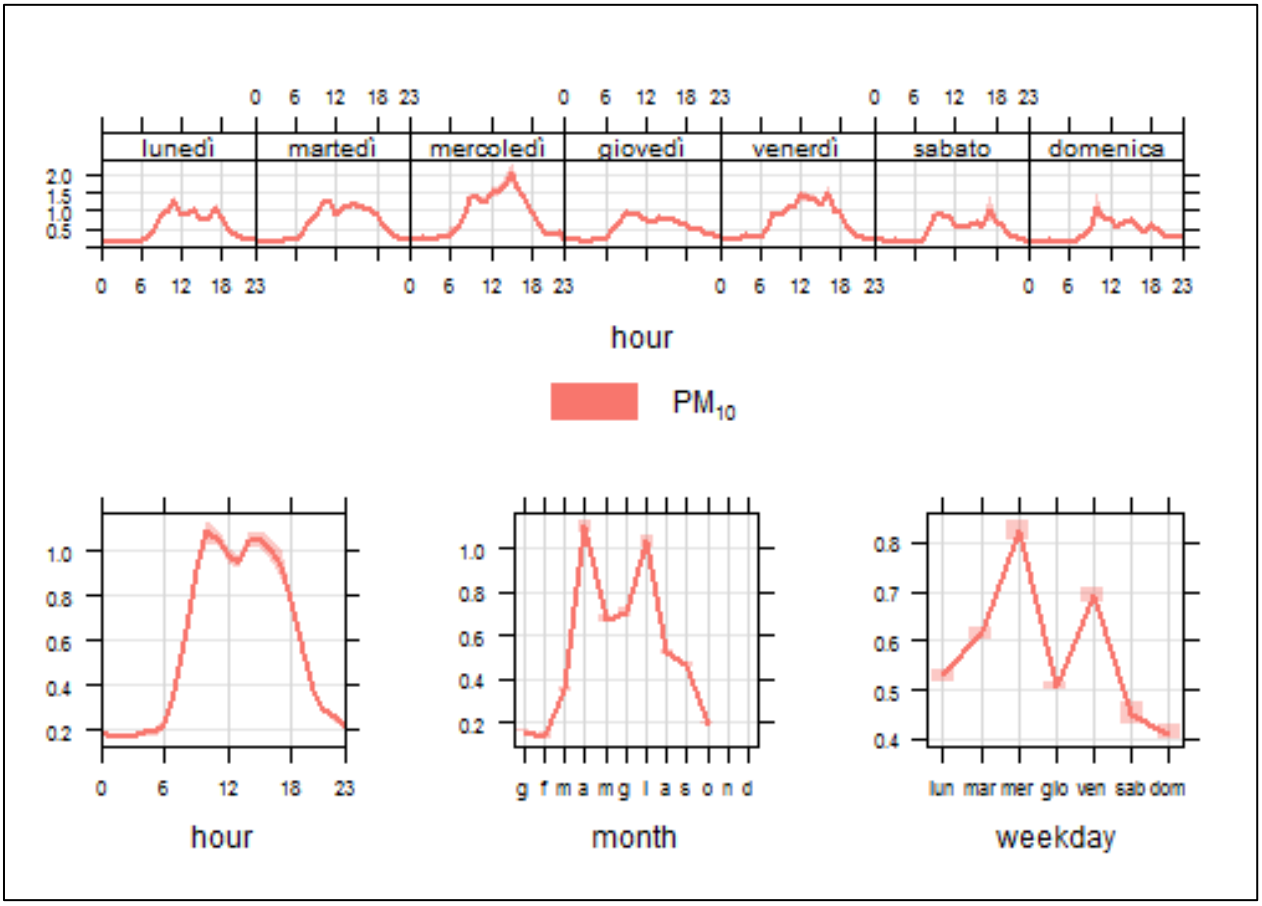
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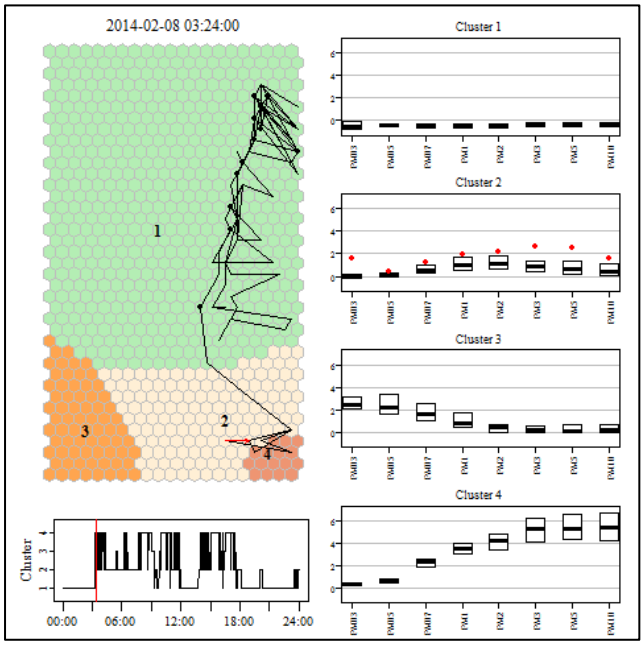
Daily trajectory animation (instructions and explanation)

First download and unzip the folder named "Daily trajectory Animation.zip" then double click on the filename "Daily trajectory Animation.html" inside the folder. The file is opened by the default browser (to our knowledge the file works within Firefox, Chrome and Windows Explorer).



The animation is a figure comprising three graphs:

- on the left there is the SOM map in which the trajectory of the day is drawn as follows: a red arrow represents the direction of the trajectory i.e. the arrow ends in correspondence to the minute written above the map and starts from the minute before. The black line shows the trajectory of the minutes have already passed. If a red point is shown thus the trajectory lies in the same neuron as the minute before;
- below the SOM map a graph shows the cluster assignment for the whole day with a red line that scrolls according to time;
- on the right fig. 5 is reproduced and the red dots represent the data of PM channels recorded at the time shown above the SOM map (normalized with the same parameters used to produce the boxplots), thus allowing to compare the single minute PM profile sample to the assigned cluster pattern.

Under the figure there are control buttons to play and stop animation, to go step by step, to choose animation speed and so on.