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Comment

## ***Interactive comment on “Analysis of exceedances in the daily PM<sub>10</sub> mass concentration (50 µg m<sup>-3</sup>) at a roadside station in Leipzig, Germany” by C. Engler et al.***

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*Your comment: Table 2: How are the seasons defined?*

Our response: The seasons were defined as Dec-Feb (winter), Mar-May (spring), Jun-Aug (summer) and Sep-Nov (autumn). We will clarify these definitions in the text in the revised version.

*Your comment: How is PM<sub>coarse</sub> defined?*

Our response: PM<sub>coarse</sub> was defined as the difference between PM<sub>10</sub> and PM<sub>2.5</sub>. This will be mentioned in the text in a more prominent location.

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*Your comment: Table 3: Why is the pressure relevant?*

Our response: Atmospheric pressure turns out to be a significant variable. We interpret this as atmospheric pressure being an indicator for the synoptic weather situation in hCentral Europe. The synoptic prevalence of high or low pressure affects other meteorological circumstances, such as the prevailing wind direction, wind speed, moisture content, vertical stratification, and more. We do not assume that the pressure itself is physically relevant, but its consequence on other meteorological parameters and processes.

*Your comment: Why CO is not included? In comparison the indicators of polluted air like CO should be discussed also to present agreement and disagreements with the observed PM10 mass concentrations.*

Our response: Unfortunately, there has been a trend to phase out CO measurements from the German air quality networks. There are only a few GAW stations left, situated without exception in rural places. Therefore, we simply have no such data available.

*Your comment: Figure 1 left: What the dashed lines mean?*

Our response: The dashed lines indicate the position of the inset map. We will improve this aspect in the revised version of the manuscript.

*Your comment: Figure 4: The correlation coefficient should be given.*

Our response: Thank you for this suggestion. We will happily provide the correlation coefficient in the revised version of the MS.

*Your comment: Figure 8: The role of colors in a), b) and c) should be explained.*

Our response: these colors are in principle arbitrary, and just denote the 9 individual trajectory clusters. There is no hidden meaning behind the colors themselves. We will reconsider the use of the colors, and maybe use them more suggestively.

*Your comment: Summary and conclusions: The role of seasons is a little too much*

*pronounced – the meteorological conditions and variations of emissions are primary. In winter the role of salt used for cleaning the roads from snow and ice should be discussed also.*

Our response: It is true that we pronounced too much the influence of the season. In fact, the seasons cause changes in meteorological conditions that are ultimately responsible. We will rewrite these sections in the revised version of the manuscript. We will also pick up your suggestion to discuss the effect of road salt. We will use results and interpretations from former intensive chemical characterization experiments at this roadside location.

Wolfram Birmili (on behalf of all co-authors)

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 15831, 2011.

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